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SOME NEW AND NOTEWORTHY APHIDAE
FROM WESTERN AND SOUTHERN
SOUTH AMERICA
(*Hemiptera-Homoptera*)

BY

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During the months of December, 1950, to and including April, 1951, Dr. A. E. Michelbacher and his wife, Martha, and Dr. E. S. Ross and his wife, Wilda, conducted an intensive insect-collecting expedition in Chile, in particular, and less extensively also in Argentina, Bolivia, and Peru with some minor collecting while en route by boat along the coast of Central America and Colombia. This expedition was a part of the activities of the California Academy of Sciences which institution arranged for the ocean transportation and supplied a truck for travel on land. On October 17, 1950, the party sailed from San Francisco on the Grace Line steamship *Santa Juana*—destination: Valparaiso, Chile. Their ship stopped at various ports on the voyage and small collections were made at Buena-ventura, Colombia; Callao, Peru; and other ports. Upon arrival at Valparaiso the party was cordially received by the veteran Chilean entomologist, Dr. Edwyn P. Reed, and by Dr. Raul Cortes of the Chilean Ministry of Agriculture, who rendered the Americans invaluable hospitality, information, and assistance during their stay in Chile.

Although large collections were made of all kinds of insects, of which thousands were taken, Dr. and Mrs. Michelbacher also gave special attention to collecting as many species of aphids as time and opportunity permitted. By much hard work they procured a sizable assemblage of species

which were preserved in alcohol and turned over to the writer for mounting and study, and for the publication of desirable information concerning them.

Little previous investigational work has been done on the aphids of Chile, in which country by far the greatest numbers of individuals and species were taken.

To the present time there have been relatively few technical papers on the aphids of western South America. In Chile, where the greater part of the insect collections were made, there has been, so far as I know, only a single new species, *Aphis citricola* van der Goot (1912), described and this has been found to be the already described *Aphis citricidus* Kirkaldy, 1907 (*Myzus*).

In Argentina and Brazil a number of able aphidologists have published many important contributions on the systematics and economies of the Aphidae in those countries as the elaborate bibliography included herein testifies. It is to be expected that interest in this field of entomological endeavor will rapidly expand in the future.

Because of the very convenient method of travel, by means of a specially fitted Ford panel truck, the party penetrated areas rarely visited by foreign insect collectors and most of the specimens were taken in the wilds of the countries traversed. Thus their undivided time and attention were given to their objectives which proved very fruitful in the way of securing splendid insect collections. They remained in Chile from November 25, 1950, until February 4, 1951, when they started on the trip over the Andes via Paso de Bermajo en route to Mendoza, Argentina, and thence eastward and northward through the cities of Rio Cuarto, Cordoba, Tucuman, Salta, Jujuy and La Quiaca, Argentina; through Camargo, Potosi, Oruro, and La Paz, Bolivia; via Lake Titicaca, Puno, Tinta, Abancay, Ayacucho, Huancayo, Oroyo and Lima, Peru. They arrived at Lima, March 4, 1951. During the remainder of their stay they travelled about 550 miles in the coastal area north of Lima through Huacho, Trujillo, Chiclayo, and to a point north of Olmos. Dr. and Mrs. Michelbacher and Mrs. Ross sailed homeward from Lima on the S.S. *Santa Flavia* on April 6 and Dr. Ross followed about a month later.

For collecting Aphidae and other small insects Drs. Michelbacher and Ross had a large supply of small glass vials. Specimens of aphids and often portions of the host plants, and labels bearing the date and locality, as nearly as the latter could be ascertained, were preserved together with each lot. These specimens have since been mounted and determined as to species as far as possible.

In cases where species collected have also been recorded by entomologists in the South American countries visited: Colombia, Peru, Chile,

Argentina, and Bolivia—these have been noted in so far as available literature permitted.

I wish to express my thanks and great appreciations to Dr. and Mrs. A. E. Michelbacher, and to Dr. and Mrs. E. S. Ross for the opportunity to mount and study this fine collection of South American aphids. The large series enabled me to prepare an excellent collection of types, paratypes, and other specimens for the department of entomology of the California Academy of Sciences and duplicate specimens for my own collection. I am grateful to Dr. E. L. Kessel for making important suggestions for the preparation of the manuscript and to Dr. Robert C. Miller, director of the Academy, for the publication of this paper, and especially to my wife, Marie, for typing, correcting, and editing it.

I also wish to thank L. A. Bahamondes, Director General de Investigaciones Agrícolas, Ministerio de Agricultura y Ganadería, República Argentina, for furnishing many specimens of Aphidae collected in Mendoza Provincia.

The total collections of aphids amounted to 25 genera; 55 species, including 14 new species; and 3,395 specimens mounted on 781 slides.

CLASSIFICATION AND DESCRIPTIONS OF SPECIES

Order **HEMIPTERA**

Suborder **HOMOPTERA**

Superfamily **APHIDOIDEA**

Family **LACHNIDAE**

Subfamily **LACHNINAE** (PTEROCHLORINAE)

Tuberolachnus saligna (Gmelin)

Giant Willow Aphid

(Figure 1)

Aphis saligna GMELIN, 1788; *A. polaris* CURTIS, 1828; *A. viminalis* B. D. FONSCOLOMBE, 1840; *Lachnus dentatus* LE BARON, 1872; *L. fuliginosus* BUCKTON, 1891; *Tuberolachnus viminalis* (B. de Fonscolombe) MORDVILKO, 1908; *Pterochlorus saligna* (Gmelin) THEOBALD, 1929.

This large aphid may be readily recognized by the conspicuous pointed tubercle near the middle dorsum of the abdomen. It is widely distributed throughout the temperate regions wherever species of *Salix* occur and it has long been known as a pest of basket willow (*Salix viminalis*) in Europe. From the records it appears that this species occurs throughout the general habitat of *Salix* spp. ("Sauce") (SALICACEAE). Collections were made as follows:

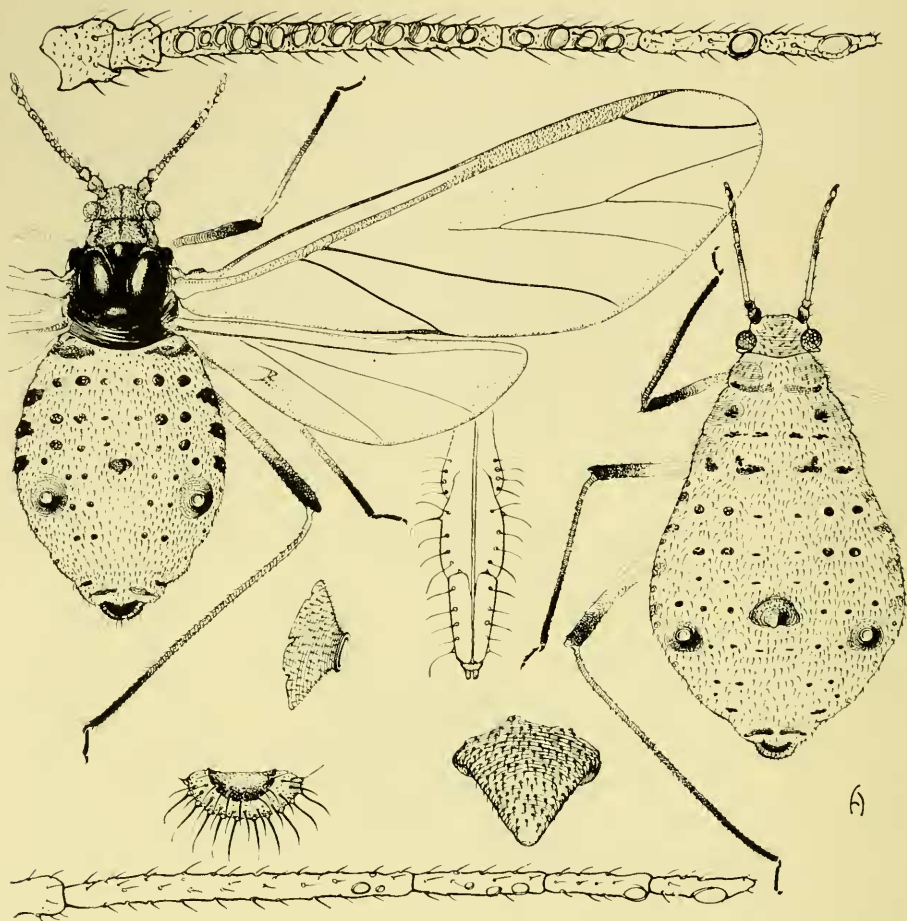


Figure 1. Giant willow aphid, *Tuberolachnus saligna* (Gmelin). Antennal segment III of alate (top) and aptera, tip of rostrum, cornicle, cauda, and anal plate and abdominal tubercle all enlarged.

CHILE:

On *Salix* sp. at Angol, Province of Bio-Bio, January 1, 1951; apterae and alatae.

ARGENTINA:

On *Salix* sp., Uspallata, Province of Mendoza, February 6, 1951. Many specimens of apterae and alatae. Other records by Blanchard 1926, pp. 327-29; 1939, 871-72; 1944, 16) are:

On *Salix* sp., Tigre, Province of Buenos Aires; also from San Juan and Zapala.

On English walnut (nogal or noguera) *Juglans regia* Linnaeus at San Rafael, Province of Tucuman.

PERU:

On *Salix* sp., Barranca, March 15, 1951; all apterae.

All collected by Dr. A. E. Michelbacher.

Family **CHAITOPHORIDAE**

Subfamily **SIPHINAE**

Sipha flava Forbes

Yellow Sugarcane Aphid

This is a subtropical yellowish species occurring on Gramineae in warm, temperate and tropical North and South America. Although not taken by Dr. Michelbacher the species has been reported in two of the South American countries where sugarcane is grown.

ARGENTINA:

Blanchard (1944:17) records this species on sugarcane (caña de azúcar) in Tucuman. The writer has also received a good series from L. A. Bahamondes collected on *Holcus halepensis* (Linnaeus) (*Sorghum* sp.) (sorgo, zahina), at Mendoza, April 9, 1951.

Family **CALLAPHIDAE**

Subfamily **CALLAPIDINAE**

Chileaphis Essig, new genus

(Figure 2)

Alate oviparous female: Head with straight front; antennae 6-segmented; imbricated; hairs few and short; segment III as long as IV and V; unguis very short; primary sensoria circular, rimmed with hairs; secondary sensoria linear or semicircular. Compound eyes well developed and with posterior ocellar tubercles. Wing venation aphid-like with radial sector only slightly curved and free at base. Legs unusual in that the alate oviparous females have numerous sensoria on the tibiae of all three pairs. Cornicles truncate cones and the diameter at the base exceeds the length; with few hairs. Cauda appears like a chitinized lobe which may be recurved. Anal plate with deep median constriction. Ovarian eggs are globular and oval.

In the alate male and apterae the cauda is almost globular with a narrow neck and wide base. Antennae of the male have both transverse and circular secondary sensoria on segments III, IV, V, and VI. Dorsal wax glands are present on all forms. Genotype: *Chileaphis michelbacheri* Essig.

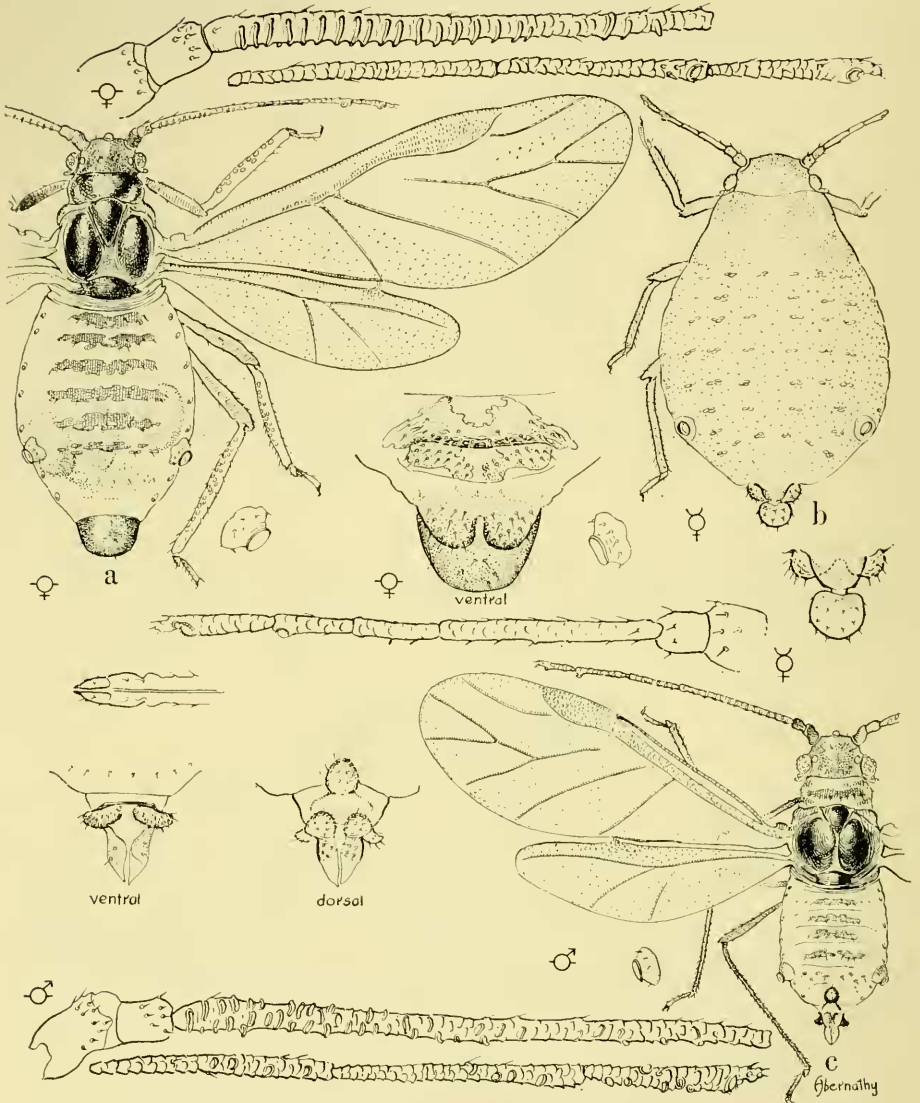


Figure 2. Chilean cypress aphid, *Chileaphis michelbacheri* Essig, new species. a, alate sexual female; b, apterous parthenogenetic female; c alate male. Antennae, cornicles, anal plate and cauda, and male sexual organs.

Chileaphis michelbacheri Essig, new species

Chilean Cypress Aphid

(Figure 2)

TYPE: *Alate oviparous female*: Pale, with the head, thorax, transverse glandular areas on abdomen, cornicles, and cauda, black or dusky. In life the body is probably partially covered with white powdery wax. Antennae imbricated and with few short hairs. Secondary sensoria on segment III linear and a few may be semicircular, scattered over the full length, 25-25 in number. Primary sensoria circular or oval, fringed with short setae. Apical sensoria on VI are compound with at least 2 small marginal ones. Lengths of segments: III, 0.63 mm.; IV, 0.35 mm.; V, 0.25 mm.; VI, 0.21 mm. Rostrum with the apical segments short and blunt; extends to second coxae. Sexual sensoria numerous on the tibiae of all legs. Wings well developed and with aphis-like venation. Radial sector only slightly curved. Second fork of media arises half-way between first fork and wing margin. Abdomen with six distinct pigmented glandular transverse areas. Cornicles dusky, as illustrated; with few short hairs. Cauda unusually large and peculiar, dusky, chitinized and with only a few short hairs. Anal plate bilobed, with many short setae. Genital plate as drawn. Length of body, 2.45 mm.; forewing, 2.8 mm.

Apterous parthenogenetic female: Whitish-gray; in living condition apparently covered with powdery wax; widely oval with short antennae and legs as delineated. Lengths of antennal segments: III, 0.28 mm.; IV, 0.09 mm.; V, 0.10 mm.; VI, 0.12 mm.; unguis nail-like. Cornicles truncate cones, the base about twice the diameter of the opening, with few short scattered hairs. Cauda large, globular, with slender stalk and wide base; with few short hairs. Anal plate deeply cleft into two lobes; with few short hairs.

Alate male: Similar in color and general appearance to the alate female but much smaller, being 1.74 mm. in length. The antennae are as illustrated. The sensoria are numerous, smaller and more oval and linear than those of the alate sexual female and occur on all the segments excepting I and II. The globular cauda is illustrated in the turned-up natural position and the sexual organs and cornicles are as drawn.

Host plant and locality: This interesting new genus and species was collected by Dr. A. E. Michelbacher by beating the available limbs and foliage of the Chilean cypress, *Pilgerodendron uviferum* (Don) Florin. The synonymy of this host plant is given by Record and Hess (1943) as follows: (*Juniperus uvifera* Don = *Thuja tetragona* Hooker—*Libocedrus tetragona* [Hooker] Endl. = *L. cupressoides* Sargent = *L. uvifera* [Don] Pilg.)

Locality: **Los Muermos, Province of Llanquihue, Chile.** It was collected only in this single locality by Dr. Michelbacher for whom the species is named.

The total number of individuals examined consisted of 50 apterous parthenogenetic females, 38 alate oviparous females, 34 immature apterous and alate forms, and 2 alate males, all mounted on 25 slides.

This species differs from other known related species in having sensoria on the tibiae of all legs of the alate oviparous female and the presence of both circular and transverse sensoria on the antennae of the alate male.

Neuquenaphis¹ michelbacheri Essig, new species

Nothofagus Aphid

(Figure 3)

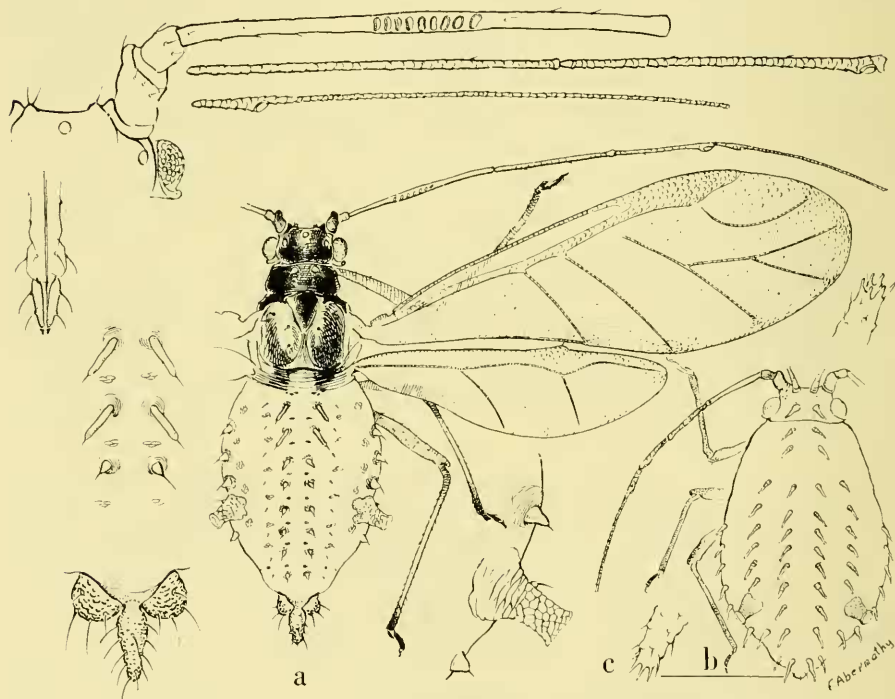


Figure 3. *Nothofagus* aphid, *Neuquenaphis michelbacheri* Essig, new species. a, alate parthenogenetic female together with head and antenna, rostrum, some tubercles and spines on dorsum of abdominal segments I-II, anal plate and cauda, and cornicle; b, young; c, apex of one of the body tubercles.

1. From the Province of Neuquen, Argentina.

TYPE: *Alate parthenogenetic female*: Color uncertain, the cleared alcoholic specimen indicates that the head, antennal segments I and II, and thorax are black and the legs, cornicles, tubercle bases, cauda, anal plate, and abdominal glandular areas are dusky. It is probable that in life a fine powdery wax may cover portions of the body. The illustration, together with the description of the genus, will give a good idea of the important characteristics. [It is well to point out that the apterous form on the lower right is probably a second or third instar young, but its peculiar tubercles will nevertheless assist in recognizing the genus and species.] Of special interest are the tuberculate first segments of the antennae; the arrangement of the oblong sensoria—11–15 near the middle of segment III; the very long flagellum; the large, distinct tooth-like structure on the inner margin near the apex of the fore femora; the faintly clouded wing veins which do not show in the drawing; the arrangement of the spined body tubercles, as figured; the short reticulated cornicles and the rather unusual type of cauda should make the species easily recognizable. In other alate paratypes the number of sensoria may vary from 8–16.

Host plant and locality: The species was collected by beating the branches of *Nothofagus dombei* Blume. It was collected along with *Spicaphis michelbacheri* and *Neuquenaphis chilensis* on the **Niagara Rancho near Temuco, Province of Cautin, Chile**. Thirteen apterous specimens and 3 alates were also collected in San Andres, Parangué, Chile. Collector, A. E. Michelbacher.

The specimen described was selected from 16 adult alate parthenogenetic females and has been designated as the type; all others as paratypes. There were also 3 immature specimens in the lot. They were mounted on 13 slides.

Neuquenaphis michelbacheri differs from *N. edwardsi* (Laing) (*Myzocallis*) in the following respects:

1. Head and thorax much narrower.
2. Presence of small setae-bearing tubercles on the pronotum.
3. Much shorter tubercles on dorsum of abdominal segments I and IX.
4. The presence of a prominent tuberculate seta or spine on the outer surface of the cornicle.
5. Somewhat more elongated cauda.

***Neuquenaphis chilensis* Essig, new species**

Dombei Aphid

(Figure 4)

TYPE: *Alate parthenogenetic female*: Color uncertain because speci-

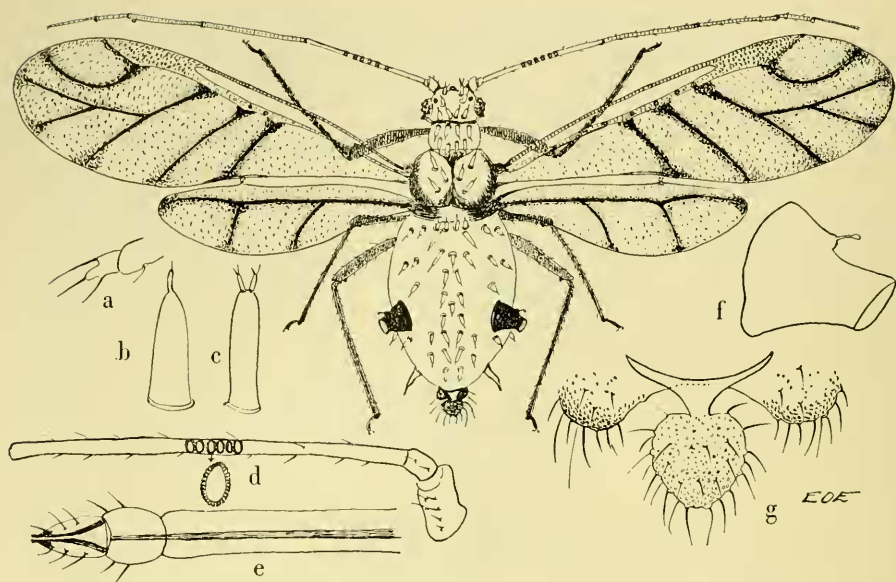


Figure 4. Dombai aphid, *Neuquenaphis chilensis* Essig, new species. a, tip of antenna; b, body tubercle; c, frontal tubercles; d, antenna showing secondary sensoria; e, rostrum; f, cornicle; g, cauda and anal lobes.

mens were preserved in alcohol and may have faded somewhat. Mounted ones are brownish and black and quite similar to the alates of *Neuquenaphis michelbacheri*. All of the body, excepting the abdomen, is dusky or brown. The cornicles, anal plate, cauda, and body tubercles are also brown. The most outstanding characteristic of the species is the large number of blunt, fleshy, cylindrical tubercles each of which is terminated with one or two short, slender setae. They vary considerably in size and are arranged somewhat as illustrated. The antennae are long and slender—extending almost to the tips of the wings; imbricated; 6-segmented; III much longer than either IV or V, but not as long as both together; IV is longer than V; the unguis of VI is $1\frac{1}{4}$ times the length of the base. Segments III have 6–6 large elongate sensoria which extend to the full width and are located near the middle. (In three paratypes the ratio is 5–5, 6–6 and 6–7.) The rostrum is fairly broad and extends to the second coxae. The legs are sparsely clothed with short, fine hairs. The wings are aphis-like and the veins are cloudy. The abdomen is beset with numerous tubercles which are variable in size and with small grouped dark wax glands; also there are five bands of small setae. The cornicles are short and somewhat truncate, with a single lateral marginal spine and somewhat imbricated; the base is twice the diameter of the apex. The cauda is conspicuous; knobbed,

being widest at the base, thickly beset with small pimple-like areas and large recurved spines supported by raised conical bases. The anal plate is shallow-divided; the two lobes are spined much like the cauda. Length of body 2.20; forewing 2.60 mm.; antennae 1.30 mm.; cornicle 0.10 mm.; cauda 0.15 mm.

This species differs from *Neuquenaphis michelbacheri* and *N. edwardsi* in having tubercles on the head and thorax; capitate cauda; very much shorter antennal unguis; and fewer antennal sensoria.

Host plant and locality: This species was collected along with the *N. michelbacheri* by beating the branches of *Nothofagus dombei* at **Hacienda San Andres**, near Purrangué, **Province of Osorno, Chile**, January 15, 1951, by Dr. A. E. Michelbacher.

The type was selected from three alate specimens, all that were collected.

Subfamily **SPICAPHINA**

Spicaphis Essig, new genus

(Figure 5)

Apterous viviparous female: Robust, the dorsum of the entire body beset with thick, rugose, glandular-like spicules or tubercles arranged for the most part in longitudinal and transverse rows; each spicule has a terminal glandular spine or seta. Similar spines also occur on the head, two basal antennal segments and cornicles. Antennae 6-segmented; eyes compound with terate tubercles. Cornicles cone-shaped and with a single tuberculate spine. Cauda knobbed. Anal plate with shallow median constriction. Genotype: *Spicaphis michelbacheri* Essig.

Spicaphis michelbacheri Essig, new species

Michelbacher Aphid

(Figure 5)

TYPE: *Apterous female*: Aleoholic specimens grayish with pigmented areas as shown in the illustration. The most important feature is the presence of numerous stout, somewhat curved, rugose tubercles arranged in what appears to be a definite pattern on the dorsum. Each of these terminates in a glandular seta. There are approximately 100 of these present. Between the body segments there are a series of small black glandular (?) areas. On the front of the head there are a pair of rather blunt tubercles, each bearing two glandular setae. The antennae are 6-segmented; the two basal segments with glandular setae and a few short spines on the other segments. The permanent sensoria are circular, fringed, and the apical

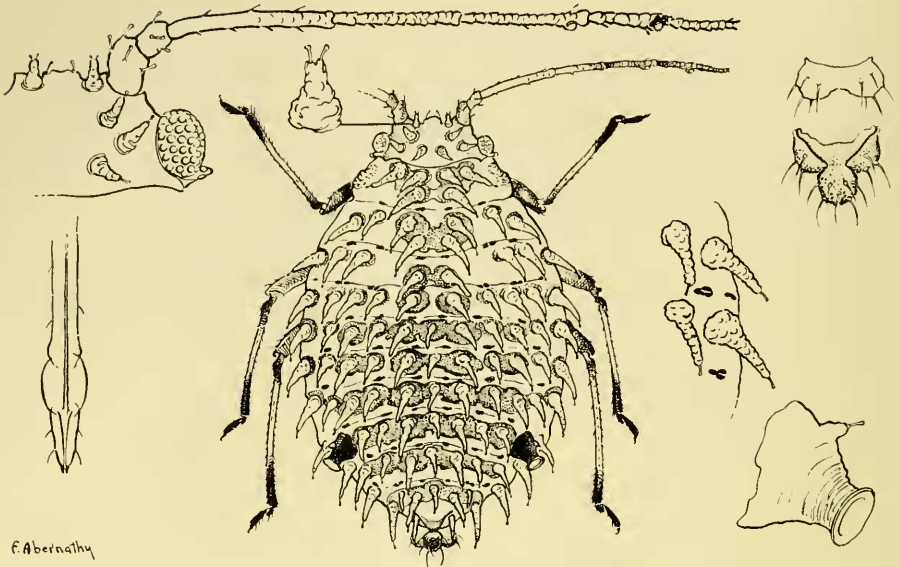


Figure 5. Michelbacher aphid, *Spicaphis michelbacheri* Essig, new species. Apterous parthenogenetic female with enlargements of head and antenna, rostrum, head tubercle, anal plate and cauda, body tubercles, and cornicle.

one on segment V is compound. Segment III is longest; IV, V and VI are subequal; the base and unguis of VI are also equal in length. The eyes are compound with well-developed terate tubercles. The legs are relatively short with very short hairs. The rostrum extends to the third coxae. The cornicles, cauda, and anal plate are as illustrated. Length of body, 1.92 mm.; antennae 1.26 mm.

Described from a single apterous specimen which is designated as the type.

Host plant and locality: The specimen was obtained by beating the limbs and foliage of *Nothofagus dombeyi* Blume, a tree native to southern Chile. It was taken along with *Neuquenaphis michelbacheri* described elsewhere. The collection was made at **Los Muermos in the Province of Llanquihue, Chile**, on January 15, 1951, by Dr. A. E. Michelbacher for whom the species is named.

Type: A single apterous female so designated.

It is barely possible that this may prove to be the apterous form of *Neuquenaphis chilensis*; the chief similarities being in the antennae, cornicles, and cauda. It differs in having a much wider body and more numerous body tubercles. The true apterous forms of *N. chilensis* are unknown.

Family **APHIDAE**
Subfamily **APHIDINAE**
Tribe **Rhopalosiphonini**
Hyalopterus arundinis (Fabricius)
Mealy Plum Aphid

(Figure 6)

Aphis pruni GEOFFROY, 1762; *A. arundinis* FABRICIUS, 1775; *Hyalopterus pruni*, KOCH, 1854.

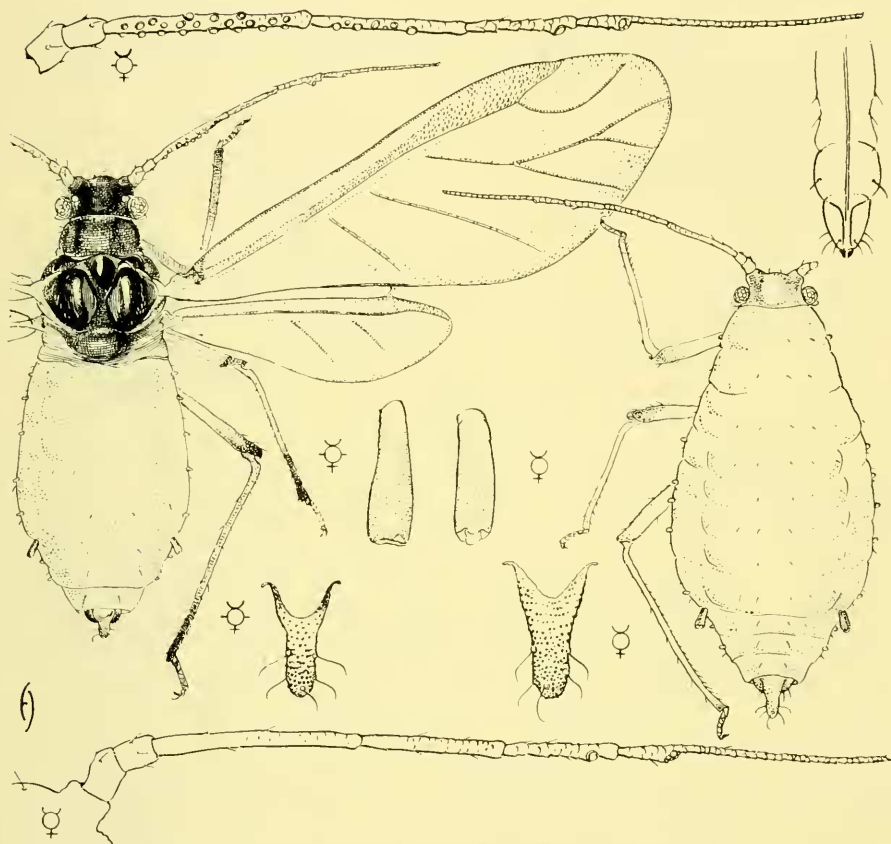


Figure 6. Mealy plum aphid, *Hyalopterus arundinis* (Fabricius). Alate and apterous females with enlarged antennae, rostrum, cornicles, and caudas.

This aphid is very common and often injurious to prune trees in CHILE according to the observations of Dr. Michelbacher, who, because of its abundance, did not make any collections of it.

It has been reported in Europe, Asia, Africa, Australia, North America, and now in South America. It overwinters in the egg stage on plums.

prunes, apricots, apples, peaches, and related plants, and usually spends the summer on reed grass, *Phragmites phragmites* (L.) and eat-tail (*Typha* spp.). The eggs are laid on trees of the genus *Prunus* and the spring generations occur on them. It is often injurious to the hosts and excretes quantities of honeydew over fruit and foliage.

Rhopalosiphum² maidis (Fitch)

Corn Leaf Aphid

Aphis maidis (FITCH) 1856.

(Figure 7)

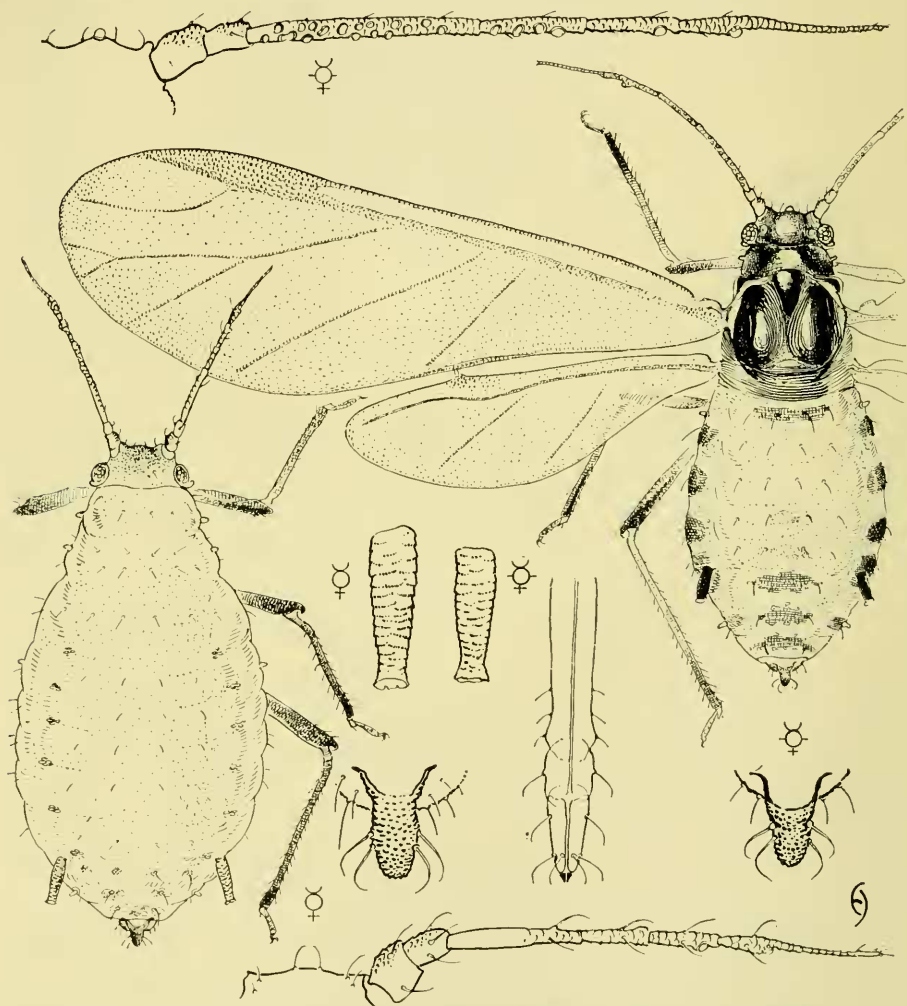


Figure 7. Corn-leaf aphid, *Rhopalosiphum maidis* (Fitch). Alate and apterous parthenogenetic females with enlarged antennae, cornicles, and caudas.

2. The ending "on" is the correct form for the Latin *siphon*.

This aphid is widely distributed throughout North and South America and in many of the South Pacific Islands. It is frequently associated with cultivated corn but also feeds on sedges (*Carex* spp.) and *Scirpus* spp., *Typha* spp., many grasses, *Zea mays* L., and other plants. Collections were made as follows:

PERU:

On Johnson grass, *Sorghum halepense*, Callao, November 14, 1950—very abundant.

On cultivated corn (maiz), Callao, November 17, 1950—1 alate and 5 apterae.

On cultivated corn, Cusco, Province of Cusco, March 4, 1951—many apterae and alatae.

On cultivated corn, Chiclayo, Province of Lima, March 21, 1951, apterae only.

ARGENTINA:

On corn, *Zea Mays* L., *Avena* spp., *Hordeum* sp., *Saccharum* spp.

In Argentina it is a vector of the mosaic of sugarcane according to Blanchard (1939:907-98; 1944:19).

Rhopalosiphum nymphaeae (Linnaeus)

Waterlily Aphid

(Figure 8)

Aphis nymphaeae LINNAEUS, 1761.

This is a Holarctic species widely distributed in Europe and North America. It overwinters on members of the genus *Prunus* and spends the summer on many aquatic and other host plants. It was collected only once.

PERU:

On *Canna* sp. in the Botanical Gardens, Lima, November 15, 1950—many alatae.

Rhopalosiphum prunifoliae (Fitch)

Apple-Grain Aphid

(Figures 9-10)

Aphis prunifoliae FITCH, 1855; *Rhopalosiphum pseudoavenae* PATCH, 1917.

This aphid is a widely distributed economic species in North America

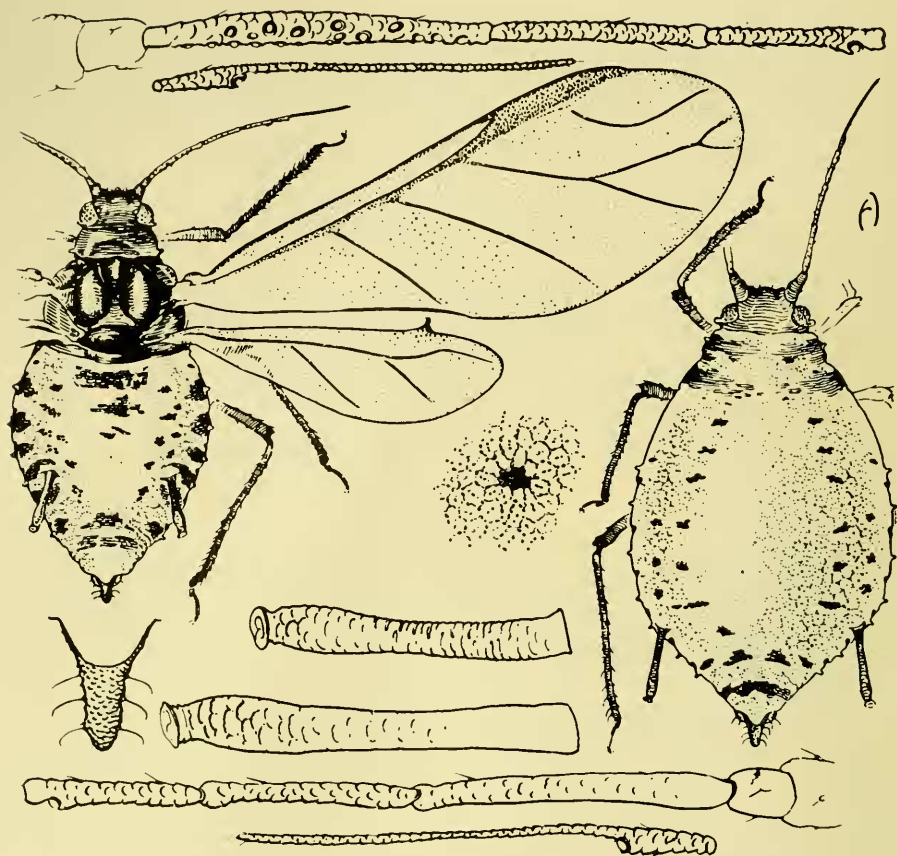


Figure 8. Waterlily aphid, *Rhopalosiphum nymphaeae* (Linn.). Alate and apterous parthenogenetic females with enlarged antennae, cornicles, cauda, and reticulated area on the dorsum of the aptera. (After Zimmerman, 1948.)

where it infests grains, corn, and grasses. In the colder areas it may overwinter on apple and other deciduous fruit trees.

CHILE:

Sweeping, Los Muermos, Province of Llanquihue, January 20, 1951
—3 alates.

PERU:

Beating plants at Andahuaylas, Province of Apurimac, February 7,
1951—1 alate.

On cultivated corn, *Zea mays* L., Cusco, March 4, 1951—apterae only.
It is a serious pest of sweet corn in California.



Figure 9. Apple-grain aphid, *Rhopalosiphum prunifoliae* (Fitch). Colonies on an ear of corn. (Photo by Oscar Bacon, August 31, 1951.)

ARGENTINA:

It is possible that some of the records of *Rhopalosiphum pseudoarvum* (Patch) on rye (centeno), maize (maiz), wheat (trigo), and *Bromus* sp.,

in Argentina, may refer to this species. Blanchard, 1939:908-911; 1944:19).

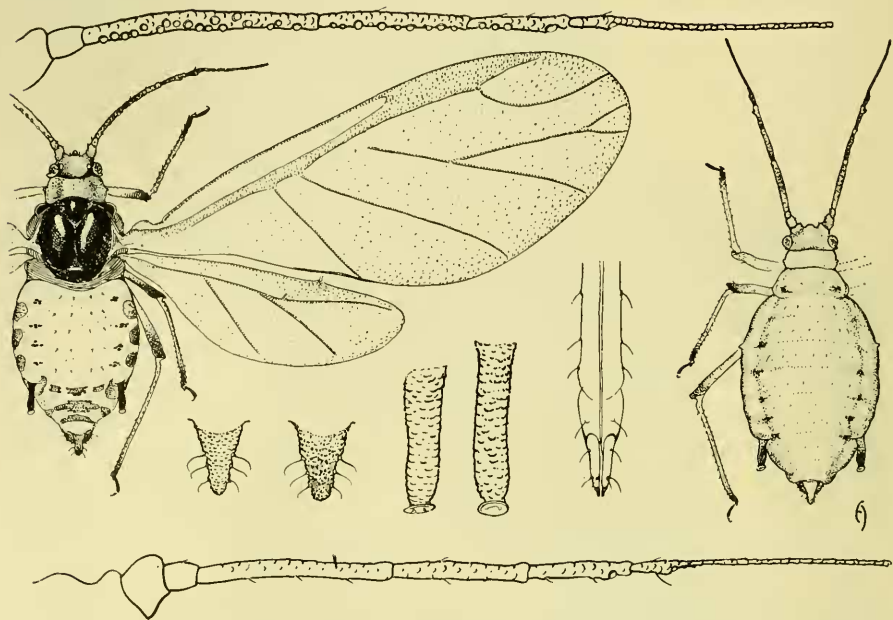


Figure 10. Apple-grain aphid, *Rhopalosiphum prunifoliae* (Fitch). Alate and apterous parthenogenetic females and enlarged antennae, caudas, cornicles, and rostrum.

***Rhopalosiphum pseudobrassicae* (Davis)**

Turnip Aphid

(Figure 11)

Aphis pseudobrassicae DAVIS, 1916.

This may be an Asiatic species which has been widely distributed by commerce. The writer has specimens from China (Nanking, Pehpei, Hangchow), Territory of Hawaii, Iraq, Egypt, Uganda, and North America.

BOLIVIA:

On a native *Nasturtium* sp. growing in a garden at Potosi, Province of Potosi, February 22, 1951—many apterae and 1 alate.

ARGENTINA:

On *Brassica nigra* Koch and *B. rapa* L. in the Province of Buenos Aires. (Blanchard, 1939.)

On *Lepidium* sp., (alheli), stocks of gilliflower (*Mathiola hederacea*) and (rabanito) or radish (*Raphanus sativus* L.).

PERU:

On cultivated stocks, *Methiola* sp., at Callao, Province of Lima, November 4, 1950—many apterae and alatae.

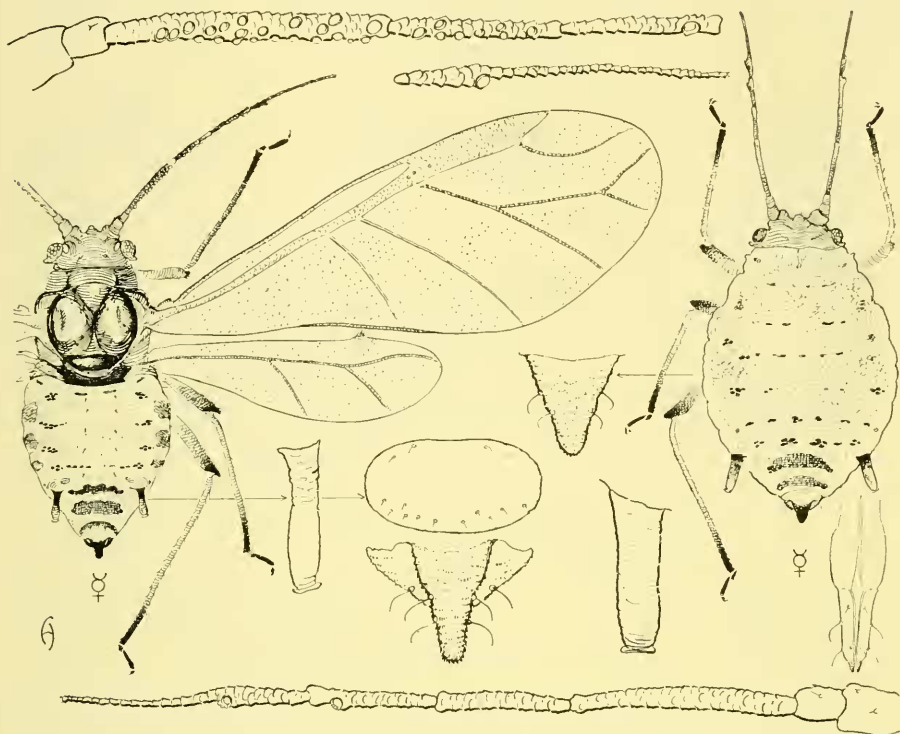


Figure 11. Turnip aphid, *Rhopalosiphum pseudobrassicae* (Davis). Alate and apterous parthenogenetic females with enlarged antennae, cornicles, genital plate, anal plate and cauda, and rostrum.

***Rhopalosiphum splendens* (Theobald)**

Subterranean Aphid

(Figure 12)

Siphonocoryne splendens THEOBALD, 1914; *Rhopalosiphum subterraneum* MASON, 1937.

This aphid is chiefly a root-infesting species occurring in many parts of North America, in Hawaii, in Africa, and now collected for the first time in South America, and so far only in Peru.

PERU:

Feeding on roots of grasses (?) under stones in the bed of the Red

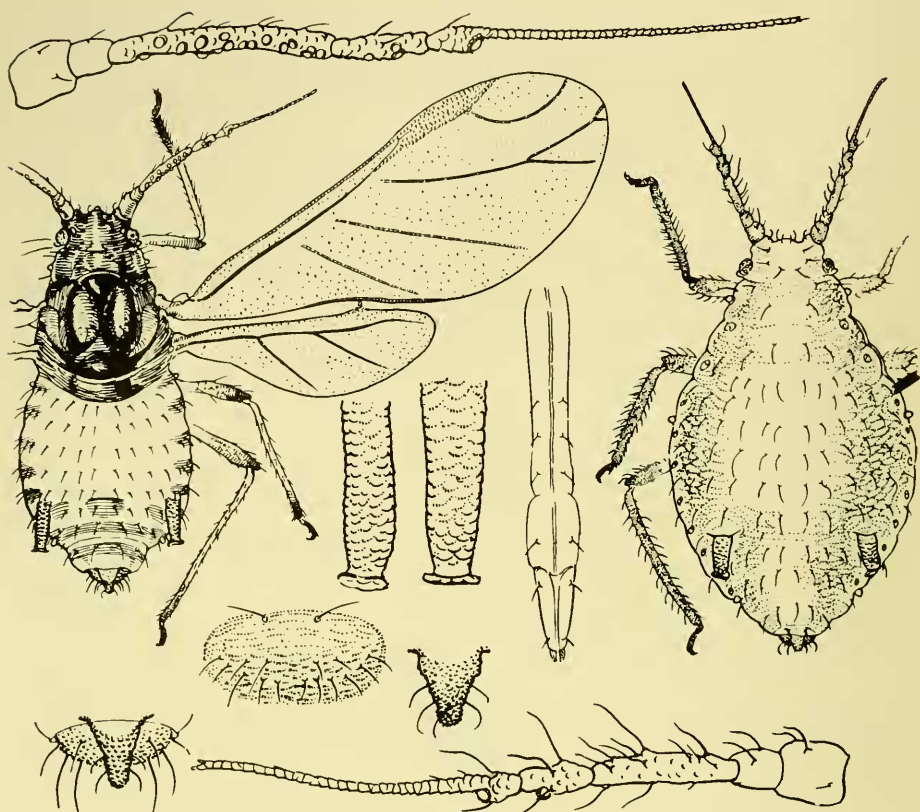


Figure 12. Subterranean aphid, *Rhopalosiphum splendens* (Theobald). Alate and apterous parthenogenetic females with enlarged antennae, cornicles, rostrum, genital and anal plate, and caudas.

River, Callao, November 16, 1950—8 alatae and 3 apterae. Collected by Dr. E. S. Ross.

Beating nightshade (*Solanum* sp.) at Andahuaylas, Province of Apurímac, February 7, 1951—a single alate specimen.

Tribe Aphidini

Aphis alstroemeriae Essig, new species

Alstroemeria Aphid

(Figure 13)

TYPE: *Alate parthenogenetic female*: Mostly black; the abdomen paler with black setal patches and areas around spiracles and two transverse bands posterior to the cornicles. Antennae with short spines and sen-

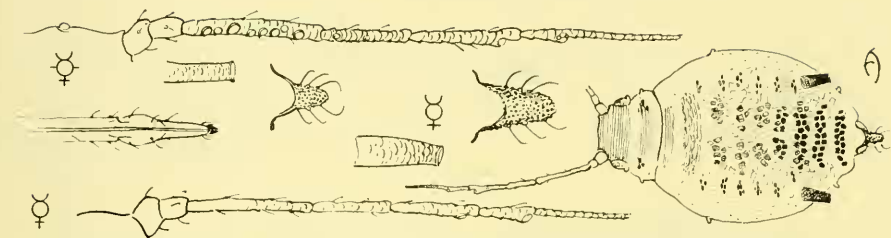


Figure 13. *Alstroemeria* aphid, *Aphis alstroemeriae* Essig, new species. Antenna of alate; rostrum; cornicles and caudas of alate and aptera; aptera showing dorsal reticulated pattern.

soria as drawn; unguis nearly three times the length of the base; circular secondary sensoria on segment III of different sizes; 9 to 11 in number; IV with 0 to 2. (In paratypes the variation is III, 5 to 11; IV, 0 to 2.) Rostrum slender and short, extending to the third coxae. Prothoracic tubercle present. Wings normal, second fork of media arises near the middle of the distance from first fork to margin of wings. Legs with scattered spines the length of which is less than the diameter of the tibiae; hind tibiae darker at apices; tarsi noticeably long. Cornicles nearly cylindrical, being broader at base, imbricated, and with slightly flanged opening. Anal plate rounded, spiculate, and spined. Cauda with wide base, the apical portion almost parallel-sided. Length of body 1.75 mm.; hind tibiae 0.10 mm.; cornicle 0.17 mm.; cauda 0.14 mm.; antennae 1.29 mm.

Apterous parthenogenetic female: Robust in form and generally dark in color. The dorsum has a mosaic pattern of lines and dark and lighter usually 5-sided tile-like areas which are most pronounced on the dorsum, especially posteriorly. Antennae dark excepting III, IV and base of V. Legs dusky or black with the basal three fourths paler. Rostrum, cornicles, cauda and anal plate black. Lateral tubercles present on some of the abdominal segments. Length 1.57 mm.; hind tibiae 0.91 mm.; cauda 0.17 mm.; antennae 1.55 mm.

Number of specimens: The series consists of 34 mature apterous and 23 alate females. A single alate specimen on a slide with 3 other alates and 6 apterae has been designated as the type.

Host plant and locality: The specimens were collected on a native species of the so-called Chilean lily, *Alstrameria* sp., 40 kilometers east of Los Andes, Province of Aconcagua, Chile, February 4, 1951, by Dr. A. E. Michelbacher.

This species differs from *Aphis medicaginis* (Koch) in having secondary sensoria on antennal segment IV and from *A. rumicis* Linn. in having fewer hairs on the cauda.

***Aphis citricidus* (Kirkaldy)**

Tropical Citrus Aphid

(Figure 14)

Myzus citricidus KIRKALDY, 1907; *Aphis tavaresi* DEL GUERCIO, 1908; *Aphis citricola* VAN DER GOOT, 1912.

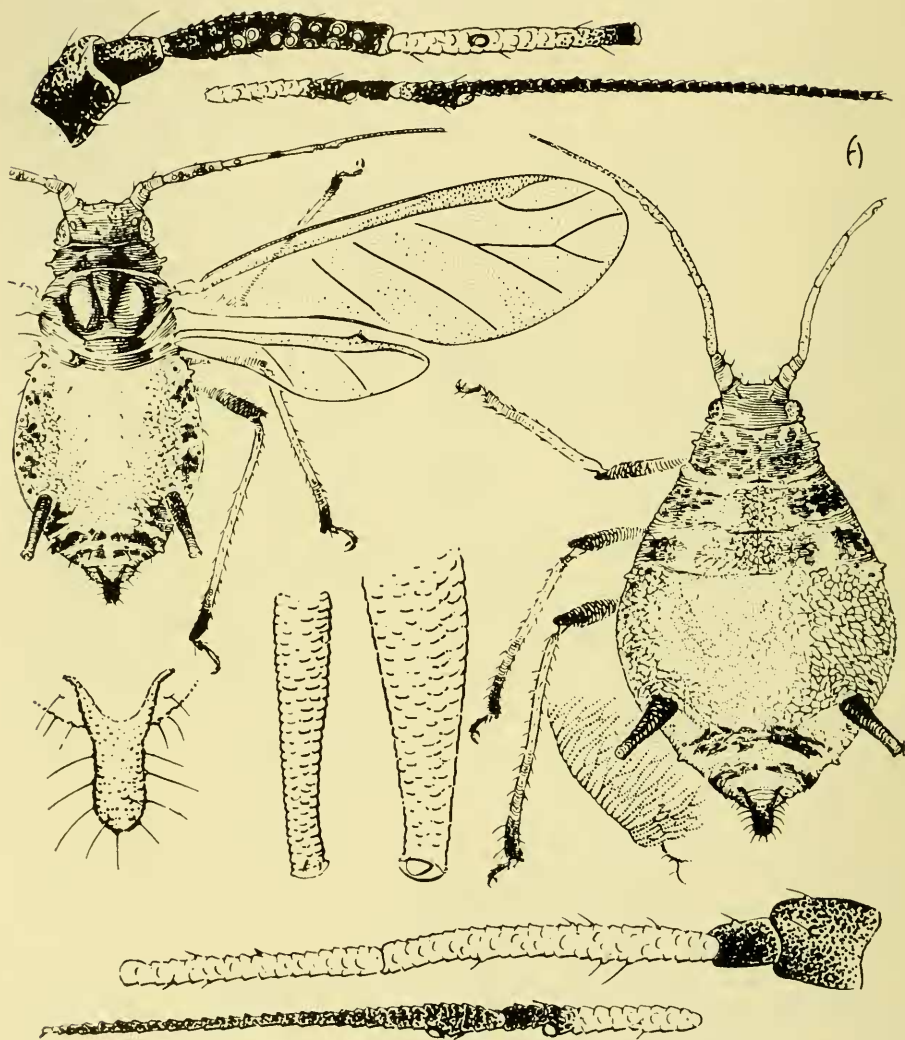


Figure 14. Tropical citrus aphid, *Aphis citricidus* (Kirkaldy).

This is a medium-sized black aphid which is often very abundant on and injurious to the tender apical shoots of its many host plants. It

chiefly occurs in the tropical and warm-temperate regions where it feeds mostly upon *Camellia*, *Citrus*, *Hibiscus*, *Mangifera*, and other plants in the more tropical areas of Japan, China, Pacific Islands, Australia, Africa, Southern Brazil, and Argentina, and in greenhouses throughout the world.

CHILE:

In Chile it was first reported and described as *Aphis citricola* by P. Van der Goot in 1912. Locality and host plant were not given.

ARGENTINA:

On *Citrus* spp., at Jujuy, Province of Jujuy, February 15, 1951, by Dr. A. E. Michelbacher. It was abundant on the foliage. Three apterae and 3 alates were taken.

It appears to the author that Blanchard's *Paratoxoptera argentinensis*, collected in orange groves or "naranjales en la Republica Argentina en Santa Ana, Misiones y en Yapeyu, Corrientes," is the tropical citrus aphid as designated above. (Blanchard 1944, pp. 20-22, fig. 1.)

The writer recently received specimens from L. A. Bahamondes collected on *Salix babylonica* L., Guaymallen, Province of Mendoza, November 28, 1950; 8 apterae.

PERU:

On *Citrus* spp. at Chiela, Province of Lima, March 21, 1951; 5 apterae.

***Aphis coreopsidis* Thomas**

Coreopsis Aphid

(Figure 15)

Alate parthenogenetic female: A small species with black head, thorax, antennae, most of the legs, and cornicles; abdomen and cauda pale. Antennae relatively short, with few short hairs; roughly imbricated. Segments III and IV somewhat swollen, III with 8 to 10 large circular and oval secondary sensoria; IV with 4 to 7 and V with 1 to 3 similar sensoria. Rostrum extending nearly to third coxae. Wing veins slightly dusky; two hamuli on each hind wing. Cauda pale with 5 or 6 hairs. Length of body 1.60 mm.; antennae 1.50 mm.; forewings 2.20 mm.; cornicles 0.25 mm.; cauda 0.15 mm.

Apterous parthenogenetic female: Cleared specimens almost entirely pale with apical two thirds of antennal segment III, all of segments IV-VI, and the cornicles black; body with dark areas around spiracular openings. Antennal segment III without secondary sensoria. Rostrum slender, extending to second coxae; with few hairs. Cornicles imbricated, somewhat

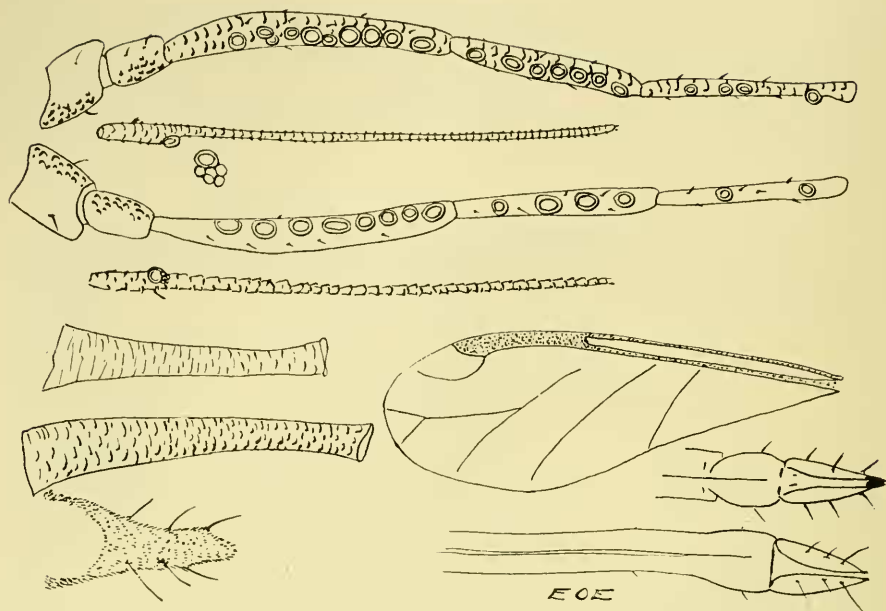


Figure 15. *Coreopsis* aphid, *Aphis coreopsidis* Thomas. Alate female showing antennae; cornicles, cauda, wing, and rostrum.

curved outwardly; cauda rather thick and with 5 or 6 hairs. Length of body 1.60 mm.; antennae 1.60 mm.; cornicles 0.60 mm.; cauda 0.30 mm.

COLOMBIA:

On a flower of the family Compositae, Buenaventura, November 4, 1950. A single alate, one mature apterous female and two immature specimens were taken. They are mounted on a single slide.

ARGENTINA:

Blanchard (1939, pp. 911, 912-914, fig. 13), reports this species on *Bidens megapota* (Speng.) at Misiones, in 1937.

This aphid was described by Cyrus Thomas in 1878 and has been reported on a number of Compositae in many parts of the United States from Connecticut to California.

***Aphis gossypii* (Glover) 1855 (1854)**

Cotton Aphid

(Figures 16-17)

This is a widely distributed species, especially in the warmer temperate and tropical regions. It is probably the commonest species in the

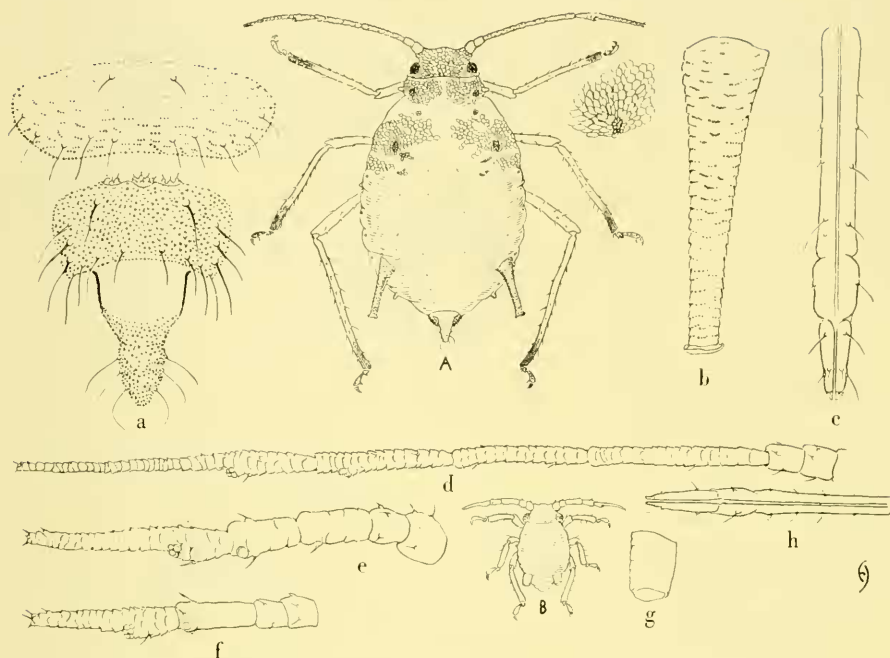


Figure 16. Cotton aphid, *Aphis gossypii* Glover. A, apterous female; a, anal plate and cauda; b, cornicle; c, rostrum; d, antenna; B, first instar young; e, antenna of second instar; f, antenna of first instar; g, cornicle, h, rostrum.

Pacific tropical islands. It also occurs out of doors and in greenhouses in the temperate areas. It is well represented in South America as indicated by the reports of the entomologists of that continent. It was collected as follows:

CHILE:

On squash, calabaza (*Cucurbita maxima*), Botanical Garden, Lima, November 14, 1950. Alatae and apterae.

On *Bignonia* sp. (?) at Anthofagasta, November 21, 1950. Many apterae.

On *Jacaranda* sp. at Ovalle, Province of Coquimbo, December 1, 1950. A few specimens.

ARGENTINA:

On myrtle-like tree, elevation 4,000 feet, Tucuman, Province of Tucuman, February 11, 1951. Many specimens—apterae and alatae.

On thorny tree, Jujuy, Province of Jujuy, February 15, 1951. A few specimens of apterae and alatae.

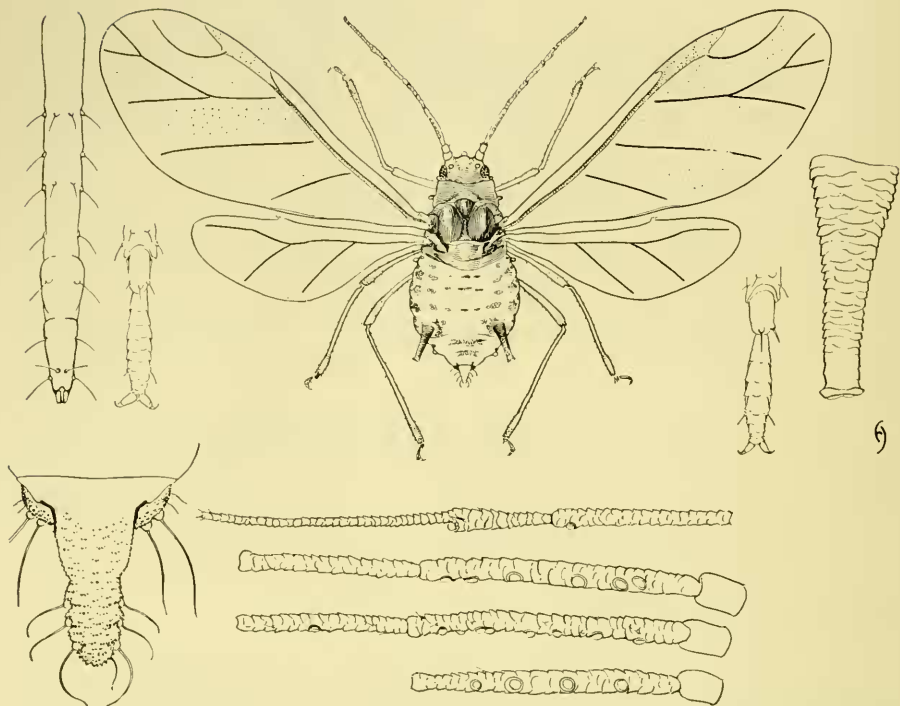


Figure 17. Cotton aphid, *Aphis gossypii* Glover. Alate female and rostrum, tarsi, cornicle, cauda, antennae, cauda.

On *Asclepias* sp., Jujuy, Province of Jujuy, February 16, 1951. Many specimens of apterae and alatae.

E. E. Blanchard (1944, p. 23; 1939, pp. 917-918) lists this species on alfalfa, *Chenopodium* sp., *Jacaranda ovalifolia* R. Br., *Guava* (guaya), *Lilium* sp., (azucena), *Lepidium* sp., *Hibiscus* sp., *Solanum sisymbriifolium* Lam., *Begonia* sp., *Citrullus vulgaris* Schrad., *Cycloma* spp., *Dyckia floribunda* Girs., *Lavatera arborea*, *Mandevillea suaveolens* Lindl., *Morrenia odorata* (Hook et Arn.), *Oleaceae*, *Orthostemon sellowianus* Berg., *Persea americana* Mill., *Pyrus malus* L., *Sechium edule* Sw., *Solanum lycopersicum* L., *Vernonia* sp., *Vitis vinifera* L., and *Zea mays* L.

The writer has recently received specimens from L. A. Bahamondes as follows:

On senna (sen-sen), *Cassia aphila*, Mendoza Capital, October 25, 1948
—many specimens.

On pear (pera), *Pyrus communis* L., Mendoza Capital, October 15, 1948—many specimens.

On *Crataegus* sp., Mendoza Capital, December 12, 1950—many specimens.

On *Parthenium hysterophorus*, Mendoza Capital, October 16, 1950—many apterae and alatae.

COLOMBIA :

On *Atriplex* sp. (?), Buenaventura, November 4, 1950. Many alatae and apterae.

On *Baccharis* sp. (?), November 4, 1950—a few alatae and apterae.

On *Compositae* (?), November 4, 1950—1 alate and 3 apterae.

On a shrub, November 4, 1950—many apterae and a few alatae.

PERU :

On *Casuarina* in Botanical Garden, Lima, November 14, 1950—many apterae and alatae.

On Pomegranate, *Punica granatum* L., Callou, November 14, 1950—a few aptera.

On squash, *Cucurbita maxima* L., Botanical Garden, Lima, November 14, 1950—9 apterae and 6 alatae.

On cultivated potato, *Solanum tuberosum* L., Sicuani, Province of Cusco, March 2, 1951—1 specimen.

On cultivated cotton, *Gossypium* sp., Chanea, Province of Lima, March 15, 1951—4 apterae.

***Aphis illinoisensis* Shimer**

Grapevine Aphid

(Figure 18)

Aphis ampelophila BLANCHARD, 1913.

This is a large, black North American species which commonly feeds on grapes and related plants.

CHILE :

On a wild *Berberis* sp., 2 km. west of Porto Veras, Province of Llanquihue, January 17, 1951. Only a few alates and apterous forms.

ARGENTINA :

This species is reported by Blanchard (1923, pp. 33-35; 1931, p. 1002) on grape, *Vitis* sp.

It was also described from specimens taken in Argentina by Del Guercio (1913, p. 159) as *Aphis ampelophila* which is a synonym of *A. illinoisensis*.

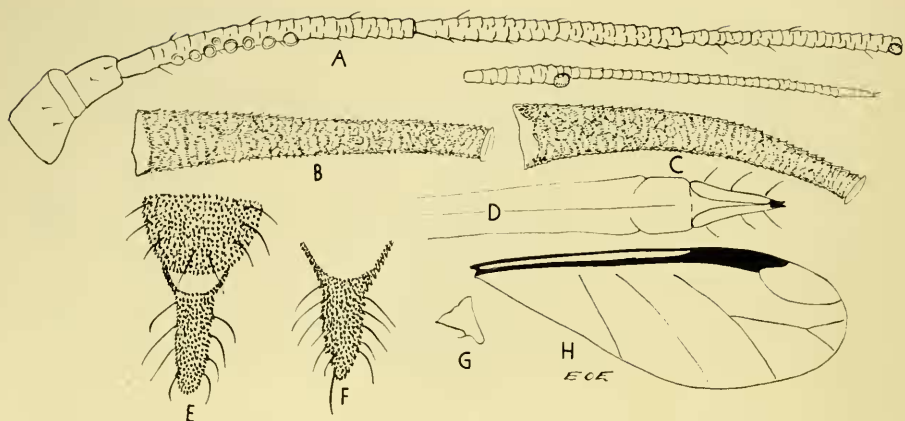


Figure 18. Grapevine aphid, *Aphis illinoisensis* Shimer. A, antenna of alate; B, cornicle of alate; C, cornicle of aptera; D, rostrum of alate; E, cauda and anal plate of alate; F, cauda of aptera; G, prothoracic tubercle; H, forewing.

Aphis marthae Essig, new species

Cabildo Aphid

(Figure 19)

TYPE: *Alate parthenogenetic female*: A large species, black and pale in various patterns, one of which is figured. Antennae black, shorter than

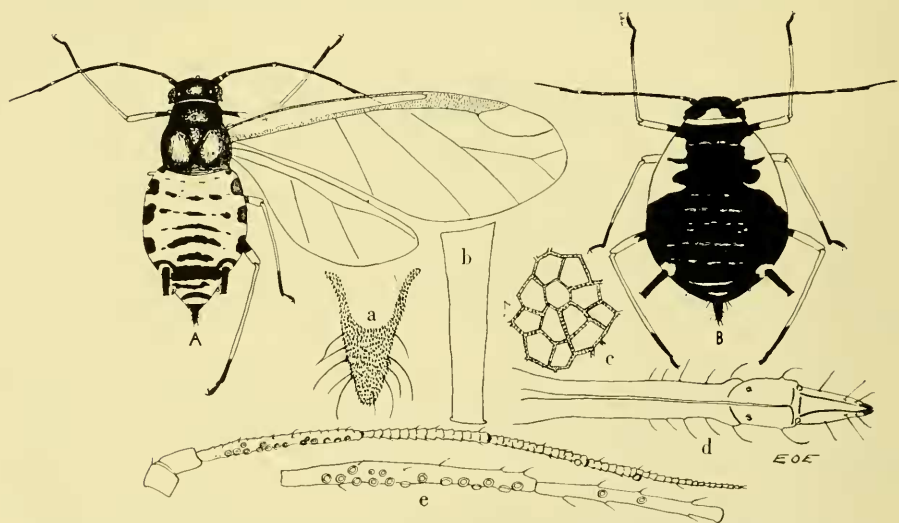


Figure 19. Cabildo aphid, *Aphis marthae* Essig, new species. A, alate; B, aptera. a, cauda and b, cornicle of alate; c, reticulations on dorsum of aptera; d, cornicle and e, antennae of alate.

the body; unguis about twice the length of the base; segment III with a variable number of small and large, circular sensoria, numbering 11-16 and distributed over much of the length. (Paratypes show the following pattern: 11-14, 11-15, 12-15, 12-16, 13-14, 13-16, 15-15, 15-18, 16-18, 16-19, 17-19, 17-21, 18-18, etc.); IV with 1-2 sensoria. (Paratypes with the following numbers: 0-1, 0-2, 0-3, 1-2, 1-3, 2-3, 2-4, 5-X); with few short hairs. Rostrum quite wide with two apical segments about equal in length; with hairs as shown. Primary wings large with second branch of media one-third distance from first fork. (This character is variable in paratypes. The branch may be near or even forward of the middle and in one instance the media had but a single branch.) Length 3.3 mm. Cornicles short, almost cylindrical, imbricated; 0.25 mm. long. The area around the base is pale. Cauda slightly shorter than the cornicle, with 11-12 hairs. Length of body 2.5 mm.

Apterous parthenogenetic female: Of the same general shape, size, and color of *Aphis medicaginis* Koch which it also resembles in having the mosaic pattern on the dorsum of the abdomen. Shining black with portions of the legs and body paler. The pale areas surrounding the bases of the cornicles are specially noticeable. The pigmented color pattern on the dorsum varies considerably and may depend upon the development and age of the individual. Nearly full grown individuals have little dark markings. Length of body 2.50 mm.; antennae 1.60 mm.; cornicles 0.30 mm.; cauda 0.30 mm.

Host plant and locality: This species was collected on an undetermined shrub or tree at **Cabildo, Province of Aconcagua, Chile**, November 28, 1950, by Dr. A. E. Michelbacher. A large number of apterae and alatae were taken.

Type and paratypes: A single alate individual has been designated as the type and the remaining 5 alatae and 20 apterae are designated as paratypes.

This species most resembles *Aphis rumicis* Linnaeus, but differs in the following respects: The body is much more heavily pigmented; there are fewer sensoria on antennal segment III in the alatae; the unguis of the antennae is much shorter; the rostrum is more robust and the apical segments longer, the cauda is more tapering and with fewer hairs.

It differs from *Aphis medicaginis* Koch in having many more sensoria on antennal segment III and in also having a few sensoria on segment IV; and in having the apical segments of the rostrum broader.

It differs from *Aphis bazzi* Blanchard in being more heavily pigmented; with shorter antennal unguis; in having fewer sensoria on antennal segment IV; and in being much larger in size: 2.50 mm. as compared with 1.80 mm.

It was named for Mrs. Martha Michelbacher, one of its collectors, in recognition for her contributions to the South American aphid survey.

***Aphis medicaginis* Koch,³ 1854**

Cowpea Aphid

(Figure 20)

This aphid is shiny black in life, especially the apterous forms with the distal portions of the legs distinctly whitish. When cleared and mounted they appear as illustrated. This aphid is quite common, especially on species of *Leguminosae*, and occurs throughout much of the world and is widely distributed in South America as indicated by the collections made by Dr. Michelbacher and others.

CHILE:

- On thorny legume (*Cassia* sp. ?), Valparaiso, November 17, 1950; many apterae.
- On *Cassia* sp. Pedegua, Province of Aconcagua, November 28, 1950. Many apterae and 1 alate.
- On thorny legume, Illapel, Province of Coquimbo, November 28, 1950—10 apterae.
- On *Artemisia* sp. ?, 90 km. east of end of tunnel, Illapel, November 28, 1950—5 apterae and 1 alate.
- On Composite (*Artemisia* sp. ?), 90 km. east of end of tunnel, Illapel, November 28, 1950—6 apterae and 2 alatae.
- On *Cereus* sp., Las Palmas, Province of Aconcagua, November 29, 1950—apterae and alatae.
- On *Cassia* sp. ?, Illapel, Province of Coquimbo, November 30, 1950—apterae only.
- On yellow-flowered cactus (cacto), La Serena, Province of Coquimbo, December 2, 1950—apterae only.
- On legume (?), Huanta, Province of Coquimbo, December 6, 1950—apterae and alatae.
- On woody shrub, Los Vilos, Province of Coquimbo, December 14, 1950—alates and apterae.

3. D. Hille Ris Lambers informs me that he does not believe that the European *Aphis medicaginis* Koch occurs in America and that what we have been calling that species is probably *Aphis craccivora* Koch. In my collection there is a good series of this European species collected on *Vicia cracca* L. in Belgium at Visé by A. Collart, 1938, and at Weerde by E. Jannoulle in 1939. These appear much like our American *Aphis medicaginis* Koch in general appearances, but differ in having much shorter cornicles; greater number of caudal hairs; and a somewhat shorter filament, unguis or processus terminalis. It is quite possible that our species is distinct.

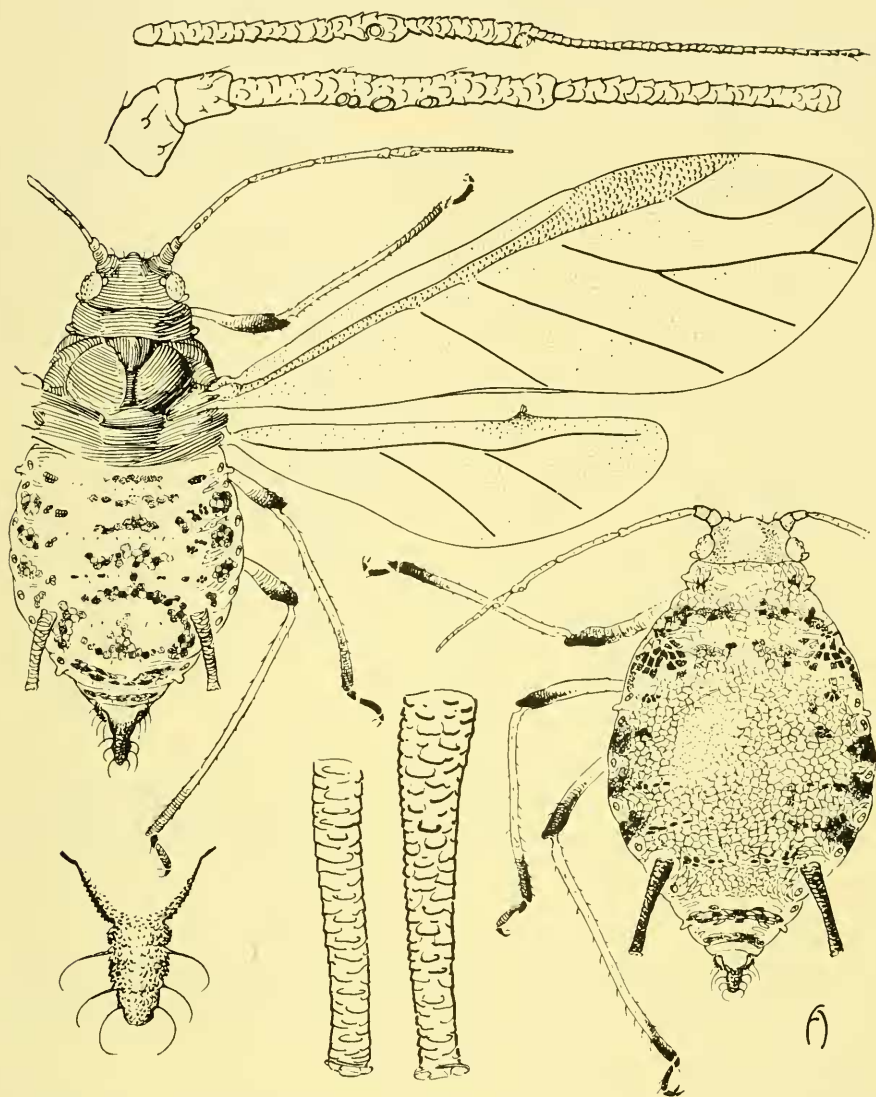


Figure 20. Cowpea aphid, *Aphis medicaginis* Koch. Adults and antenna, cauda and cornicle of aptera. (After Zimmerman, 1948.)

On leguminous tree, Valparaiso, December 17, 1950—apterae and alatae.

On *Baccharis* sp. ?, Chillan, Province of Nuble, December 27, 1950—many apterae and 1 alate. Very small specimens.

- On thorny legume, Antuco, Province of Bio-Bio, December 28, 1950—apterae only.
- On thorny legume, El Abanico, Province of Bio-Bio, December 30, 1950—alatae and apterae.
- On *Solanum* sp., Los Andes, Province of Aconcagua, February 4, 1951, many apterae and alatae.
- On wild nasturtium (*nastureia*), Portillo (3,000 feet), Province of Aconcagua, February 4, 1951. Many apterae and alatae.

ARGENTINA:

- On *Astragalus* sp. ?, La Quiaca, Province of Jujuy, February 18, 1951—many specimens apterae and alatae.

In addition, Blanchard (1939, pp. 914-916; pp. 922-923) lists the following host plants (as *Aphis fabae* Scopoli and *A. laburni* Kalténbach):

Acacia sp., *Arachis hypogaea* L., *Cicuta* sp., *Dyckia floribunda* Gris., *Eryngium* spp., *Euonymus* sp., *Eucalyptus* spp., *Foeniculum vulgare*, *Gladiolus* sp., *Cirsium* sp., *Chrysanthemum* sp., *Cosmos* sp., *Dahlia* sp., *Phaseolus lunatus* L., *Phoenix* sp., *Gerbera jamesoni*, *Senecio bouariensis* H. & A., *Sesbania punicea* (DC), *Spiraea chamaedrifolia* L., *Vicia* sp.

The writer has recently received specimens from L. A. Bahamondes collected by him as follows:

- On *Solanum* sp., Mendoza, October 3, 1948—many apterae.
- On a Composite, Mendoza, February 10, 1948—many apterae.
- On *Glorinia* sp., Mendoza Capital, March 10, 1948—a few apterae.

COLOMBIA:

- On legume, Buenaventura, November 4, 1950. Collection consisted of 21 apterous females.

PERU:

- On broad bean, *Vicia faba*, Callao, November 4, 1950—5 alates and 10 apterae.
- On *Astragalus* sp., Sicuana, Province of Cusco, March 1, 1951—many specimens, all apterae.
- On *Cassia* sp., Cusco, Province of Cusco, March 2, 1951—many specimens—all apterae.
- On thorny legume, Cusco, Province of Cusco, March 2, 1951—all apterae.

Aphis nerii Boyer de Fonscolombe, 1841

Oleander Aphid

(Figure 21)

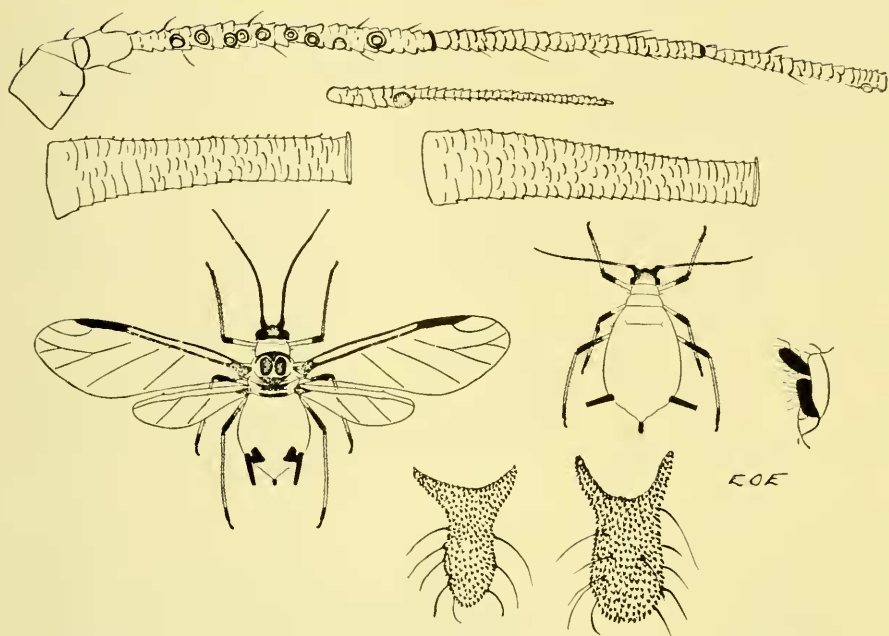


Figure 21. Oleander aphid, *Aphis nerii* (Boyer de Fonscolombe). Alate and apterous parthenogenetic females with enlarged antenna of alate and cornicles and caudas of alate and apterous forms. A bright yellow and black species.

Cerosiphia nerii (Boyer de Fonscolombe) BÖRNER, 1952.

This is a widely distributed aphid occurring on *Asclepias* spp., *Caltrophis* spp., *Gonolobus* spp., and related genera in Europe, Asia, South Pacific Islands, North and South America, and Africa.

CHILE:

On oleander, *Nerium* sp. (adelfa, baladre), Antofagasta, November 22, 1950; many apterae and alatae.

On an unknown host, south slope of Bell Mountain, Province of Aconcagua, December 17, 1950—1 alate.

Beating (plants not ascertained) near the mouth of Maullin River, Province of Llanquihue, January 22, 1951—a large number of apterae and alatae.

BOLIVIA:

On *Asclepias* sp., Cumergo, February 20, 1951—many apterae and alatae.

ARGENTINA:

On *Nerium oleander* L., *Araujia sericofera* Bert., *Asclepias curassavica* L., and *Clematis* sp. (Ornamental) by Blanchard (1923, pp. 39–41; 1939, pp. 925–26).

PERU:

On a vine-like *Asclepias* (?), 65 miles west of Cusco, March 5, 1951—3 alatae.

On *Asclepias* sp., Chiclayo, Province of Lambayeque, March 19, 1951—all apterae.

***Aphis rumicis* Linnaeus, 1758**

Bean or Dock Aphid

(Figures 22–25)

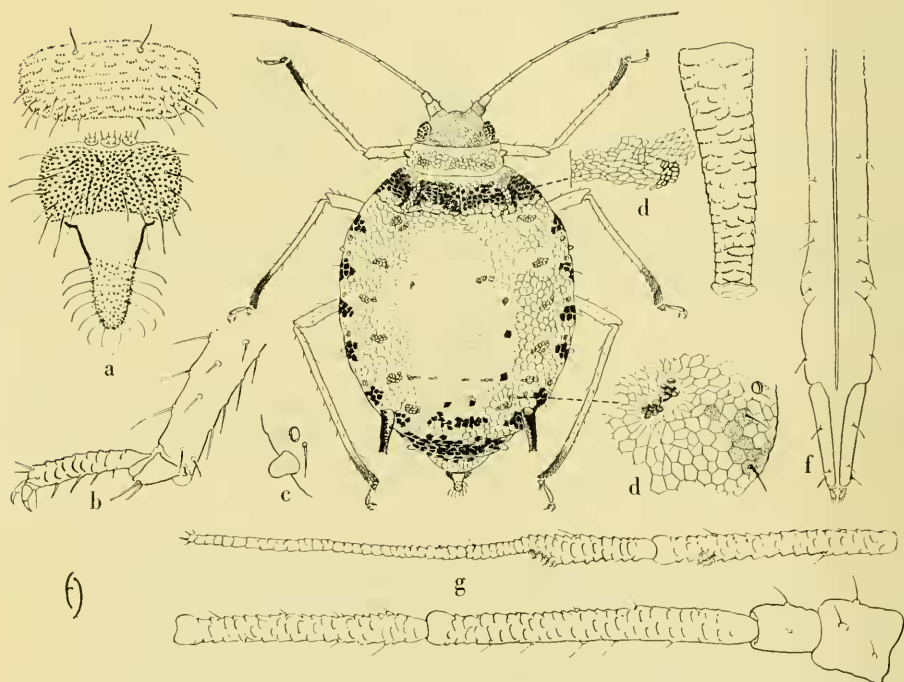


Figure 22. Bean or dock aphid, *Aphis rumicis* Linnaeus. Apterous parthenogenetic female and enlargements of a, anal plate and cauda; b, tarsus; c, lateral abdominal tubercle; d, mosaic and glandular areas; e, cornicle; f, rostrum; g, antenna.

Almost a cosmopolitan species which is widely distributed throughout most of the world. It feeds upon many different hosts. The following collections were made:

CHILE:

On *Chrysanthemum* sp., Antofagasta, November 21, 1950—apterae only.

On *Epiphyllum* cactus, in a garden at La Serena, Province of Coquimbo, December 2, 1950—apterae and alatae.

On a native shrub, 10 miles below Laguna Dam, 6,000–7,000 feet, December 6, 1950. Plant heavily infested—only apterae collected.

On *Rumex* sp., Hacienda San Andres, near Purranque, Province of Llanquihue, January 1, 1951—all apterae.

On thistle (*Cirsium* sp. ?), Angol, Province of Malleco, January 1, 1951; all apterae.

Beating at Hacienda San Andres, near Purranque, Province of Llanquihue, January 15, 1951—a few apterae.

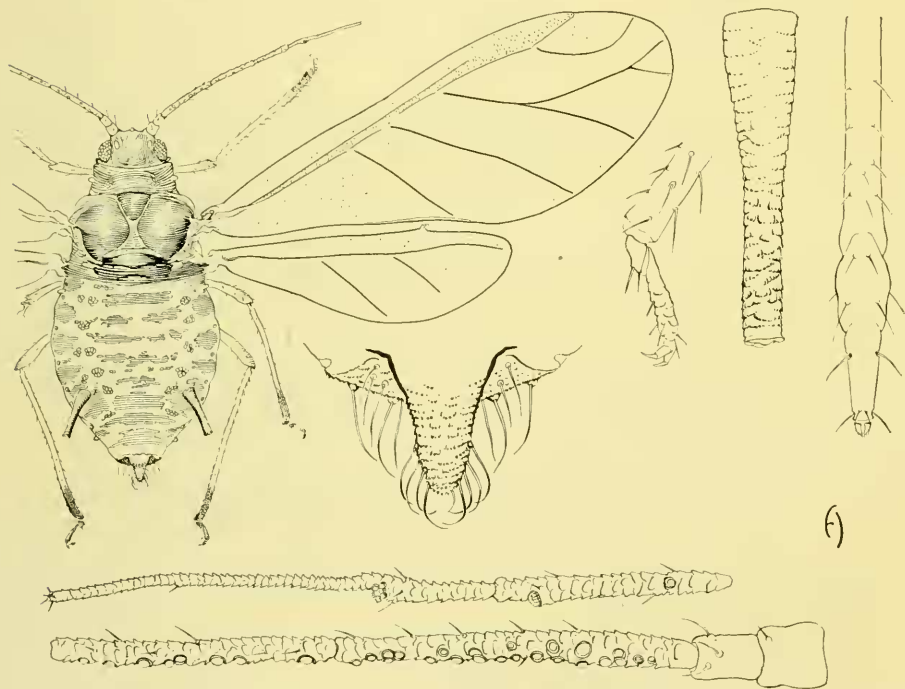


Figure 23. Bean or dock aphid, *Aphis rumicis* Linnaeus. Alate parthenogenetic female and enlarged cauda, tarsus, cornicle, rostrum (venter), and antenna.

On wild currant ? (grosellers), Hacienda San Andres, Parranque, Province of Llanquihue, January 15, 1951—apterae and alatae.

ARGENTINA :

On wild potato (papa), Salta, Province of Salta, February 15, 1951—1 single alate.

On *Solanum* sp., Salta, February 15, 1951—many specimens; many apterae and 1 alate.

On thorny legume, Jujuy, Province of Jujuy, February 15, 1951—many specimens, all apterae.

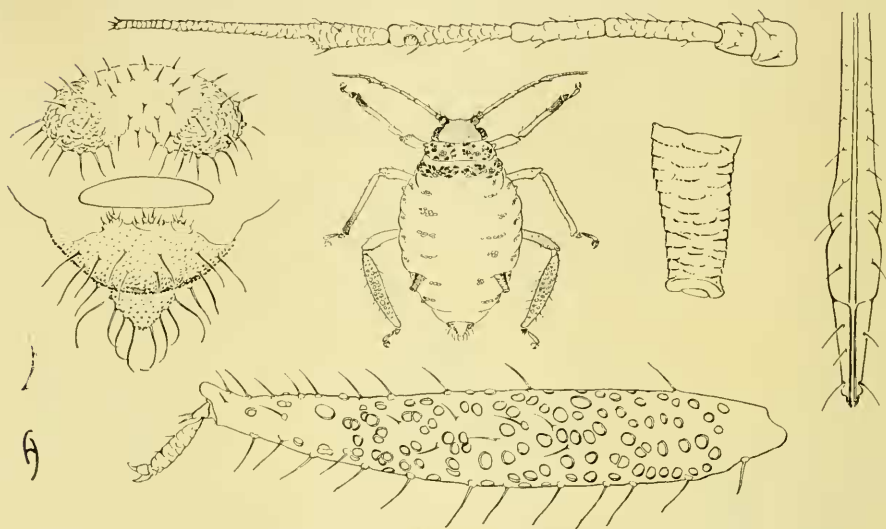


Figure 24. Bean or dock aphid, *Aphis rumicis* Linnaeus. Sexual female and enlarged anal plate and cauda, antenna, cornicle, rostrum (venter) and hind tibia showing sensoria.

On *Solanum* sp., Jujuy, February 16, 1951—many apterae and alatae. Blanchard (1935: 373–375; 1939: 929–930) records it

On *Rumex* sp., at Tucuman.

On *Rumex* sp., *Cestrum parqui* L.'Herit, *Solanum lycopersicum* L., *S. nodiflorum* Jacq., *S. capsicastrum* Link., and other solanums.

The writer has recently received specimens from L. A. Bahamondes, collected by him as follows:

On *Chaenomeles japonica* (Thunb.) Lindl., at Mendoza, October 20, 1950—3 apterae and 2 alatae.

On *Tulipa* sp., Las Heras, Mendoza, October 10, 1950—apterae and alatae.

On *Rumex* sp., Mendoza, Guaymallen y Capital, November 1, 1950—apterae only.

On *Eugenia* sp., Mendoza Capital, May 10, 1948—apterae.

On *Solanum* sp. (beating), Ando Huyas, Province of Mendoza, February 15, 1951—1 alate.

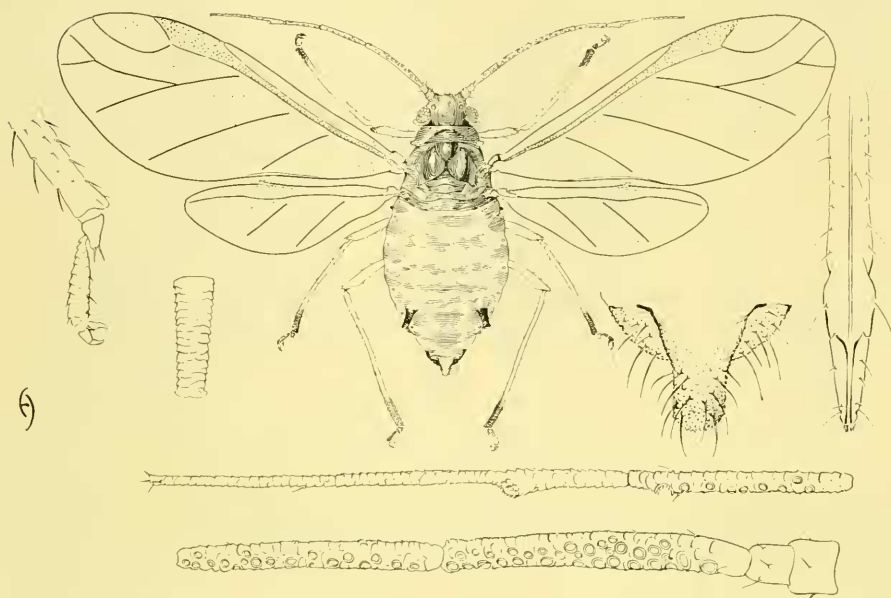


Figure 25. Bean or dock aphid, *Aphis rumicis* Linnaeus. Alate and enlarged tarsus, cornicle, anal plate and cauda, rostrum, and antenna of same.

PERU :

On *Agave* sp., Rio Pampas, Province of Purimae, March 8, 1951—many apterae and alatae. About 60 per cent killed by a fungus (hongo).

On *Composite* (?), on road 65 miles west of Cusco, March 5, 1951. Only apterae.

On *Composite*, Cusco, March 5, 1951—1 alate.

Toxoptera aurantii (Boyer de Fonscolombe)

Black Citrus Aphid

(Figure 26)

Aphis aurantii BOYER DE FONSCOLOMBE, 1841; *Aphis camelliae* KALTENBACH, 1843;
Toxoptera aurantiae KOCH, 1856.

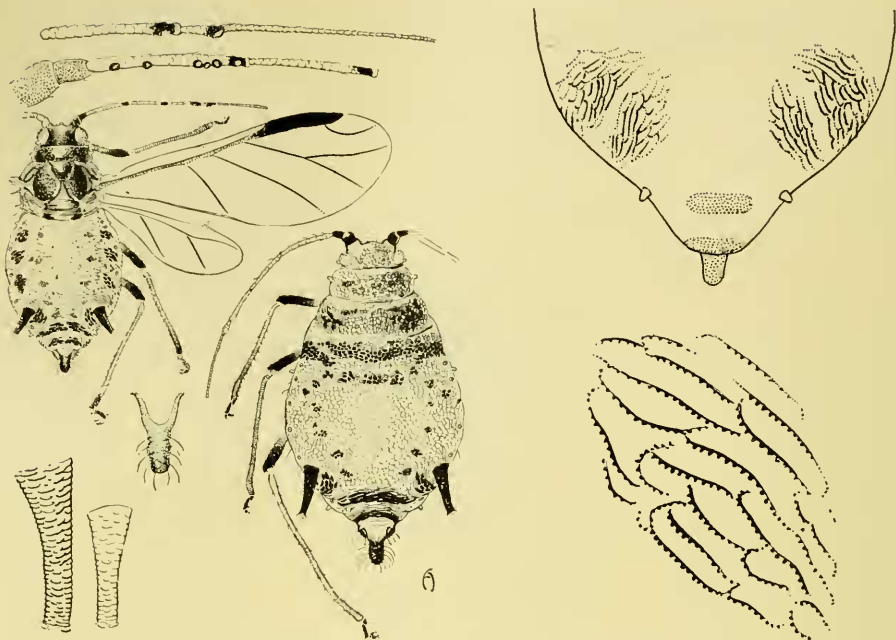


Figure 26. Black citrus aphid, *Toxoptera aurantii* (Boyer de Fonscolombe). At left: alate and apterous parthenogenetic females with enlarged antennae, cauda, and cornicles. (After Zimmerman, 1948); at right: net-like saw-toothed reticulations on the venter beneath the bases of the cornicles, which are found so far only in this species and in *Aphis citricidus* (Kirkaldy).

This species is widely distributed throughout the tropical and sub-tropical regions of the world and feeds upon such plants as those belonging to the genera *Camellia*, *Cinchona*, *Citrus*, *Coccoloba*, *Coffea*, *Ficus*, *Gardenia*, *Hibiscus*, *Ilex*, *Mangifera*, *Persea*, *Straussia*, *Theobroma*, and others. Strangely enough only a single collection was made on this expedition in South America and that in Colombia.

ARGENTINA:

This species is quite common throughout the Provinces of Buenos Aires, Entre Ríos, Corrientes, Santa Fe, and Tucumán, according to Blanchard (1925, pp. 20–22; 1939, pp. 903–904; 1944, p. 18).

On *Citrus* spp., *Ilex paraguariensis* Bonop., *Mandevilla suaveolens* Lindl., *Phytolacca dioica* L., *Scutia buxifolia* Reiss., and *Viburnum tinus* L.

COLOMBIA:

On mango (*Persea* sp.), Buenaventura, November 5, 1950—many apterae.

Subfamily **ANURAPHINAE**Tribe **Anuraphidini**Subtribe **Anuraphidina****Brachycaudus helichrysi** (Kaltenbach)

Leaf-curl Plum Aphid

(Figure 27)

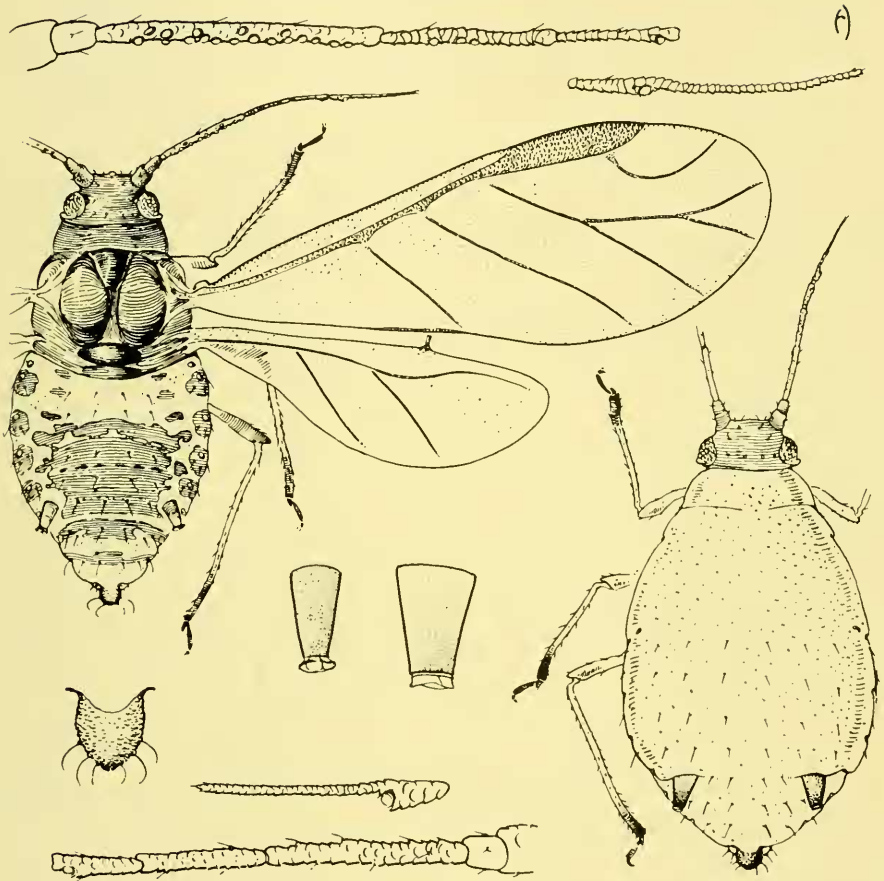


Figure 27. Leaf-curl plum aphid, *Brachycaudus helichrysi* (Kaltenbach). Alate and apterous parthenogenetic females with enlarged antennae, cornicles, and cauda. (After Zimmerman, 1948.)

Aphis helichrysi KALTENBACH, 1843; *A. bartsiae* WALKER, 1848; *A. bellis* BUCKTON, 1879; *A. verbenae* MACCHIATI, 1883; *A. leonopedii* SCHOUTEDEN, 1903; *Anuraphis cyani* THEOBALD, 1915; *A. abrotaniella* THEOBALD, 1919; *A. cantauriella* THEOBALD, 1921; *A. sherardiae*, THEOBALD, 1926.

This small, pale aphid has conspicuous dark body markings. It is widely distributed throughout the temperate regions of the world and attacks many kinds of plants.

CHILE:

Very abundant on peach (*Prunus persica*) causing the leaves to curl at Rivadava, Province of Huanta, December 4, 1950. Very many apterous and but one alate were collected at the time. The alatae were just beginning to appear.

On the wing at Los Muermos, Province of Llanquihue, January 20, 1951—1 alate and many apterae.

ARGENTINA:

Blanchard (1922, pp. 54–56) reports this species often abundant on peach and says it is “the chief enemy of the peach and causes much damage in the spring to the young foliage, which soon becomes curled and distorted.”

On *Senecio* sp., *Aster* sp., *Prunus* sp., and Compositae in the Province of Buenos Aires. (Blanchard 1922, p. 52, fig. 17; 1939, p. 894).

On *Cineraria* sp., Pampa (Blanchard 1944, p. 57).

Specimens have also been received from L. A. Bahamondes:

On (ortiga) nettle, Godoy Cruz, Mendoza Capital, November 20, 1950
2 alatae.

PERU:

On Shasta daisy, *Chrysanthemum maximum* (?), Lima, November 15, 1950—apterae and alatae.

On potato, *Solanum tuberosum*, 3,000 meters altitude, Sicuana, Province of Cusco, March 2, 1951. Alatae only.

On marigold, *Calendula officinalis*, Callao, November 14, 1950—6 apterae and 6 alatae.

On *Chrysanthemum* sp., Botanical Garden, Lima, November 13, 1950—3 apterae.

Tribe **Brachycolini**

Brevicoryne brassicae (Linnaeus)

Cabbage Aphid

(Figures 28–29)

Aphis brassicae LINNAEUS, 1758; *Brevicoryne brassicae* (Linnaeus) VAN DER GOOT, 1915.

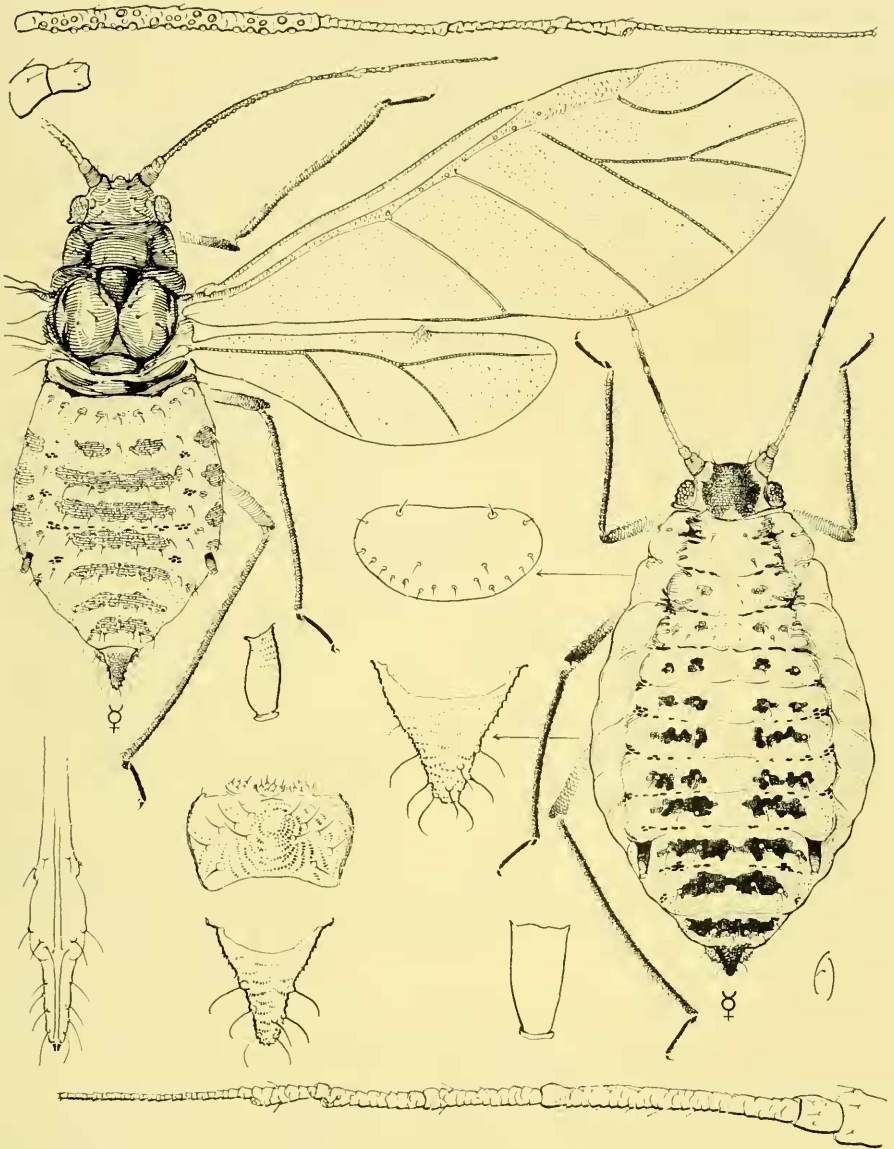


Figure 28. Cabbage aphid, *Brevicoryne brassicae* (Linnaeus). Alate and apterous parthenogenetic females and enlarged genital plates, caudas, cornicles, rostrum, and antennae.

This very common aphid appears to be a Holarctic species, although it may well have been early introduced into the Americas from Europe. It has become widely distributed throughout much of the world by commerce.

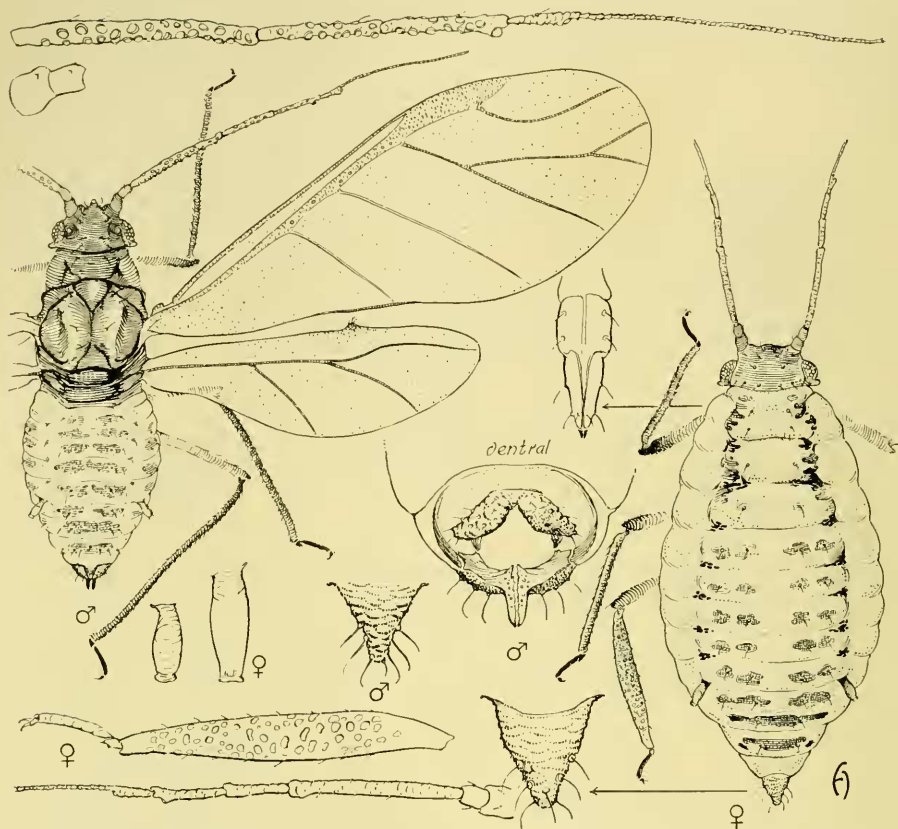


Figure 29. Cabbage aphid, *Brericyrpe brassicae* (Linnaeus). Alate male and apterous female with enlarged antennae, rostrum, cornicles, caudas, male genitalia, and female hind femur with sexual sensoria.

CHILE:

On cabbage, *Brassica oleracea* var. *capitata*, at Purranque, Province of Osorno, January 17, 1951—many apterae and alatae.

ARGENTINA:

“Common everywhere in Argentina on *Brassica* spp., *Raphanus* spp., and *Spinacia oleracea*.” (Blanchard, 1925, pp. 12–14.)

PERU:

On mustard (*Brassica* sp.), Callao, November 14, 1950—many apterae and alatae.

On Caper-bush, *Capparis spinosa*, Botanical Garden, Lima, November 14, 1950.

Hyadaphis conii (Davidson)

Honeysuckle Aphid

(Figure 30)

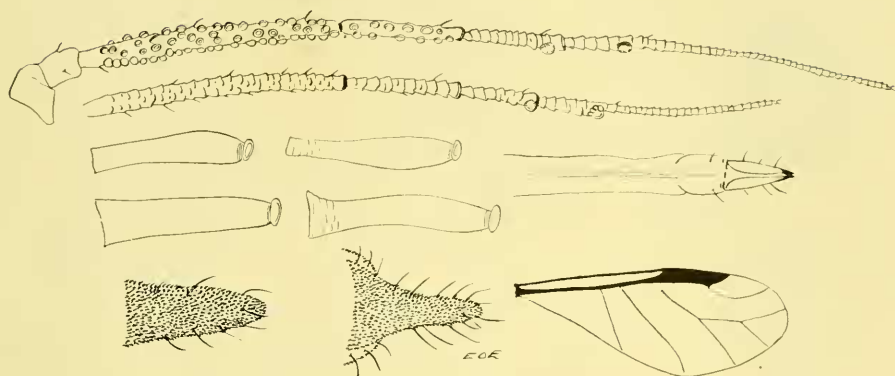


Figure 30. Honeysuckle aphid, *Hyadaphis conii* (Davidson). Enlarged drawings of antennae, cornicles, rostrum, caudas, of aptera and alate and wing of alate.

Siphocoryne conii DAVIDSON, 1909; *Aphis xylostei* SCHRANK, 1801; *Hyadaphis conii*ella THEOBALD, 1925; *H. sii* BÖRNER, 1931-32; *Rhopalosiphum melliferum* HOTTES, 1930.

This species is widely distributed in temperate regions and is common in Europe and North America and also occurs in Africa and South America. It particularly infests *Lonicera* spp. and members of the large family Umbelliferae.

CHILE:

A single collection of many apterae and alatae was made on *Carum* sp. (?), 60 kilometers east of Los Andes, Province of Aconcagua, February 4, 1951.

Tribe **Liosomaphidini****Cavariella aegopodii** Scopoli

Parsnip and Willow Aphid

(Figure 31)

Aphis aegopodii SCOPOLI, 1763; *Cavariella capreae* (Fabricius), 1775 (Many authors).

This is probably a Holarctic species commonly occurring in Europe and North America. It has been introduced into many parts of the world.

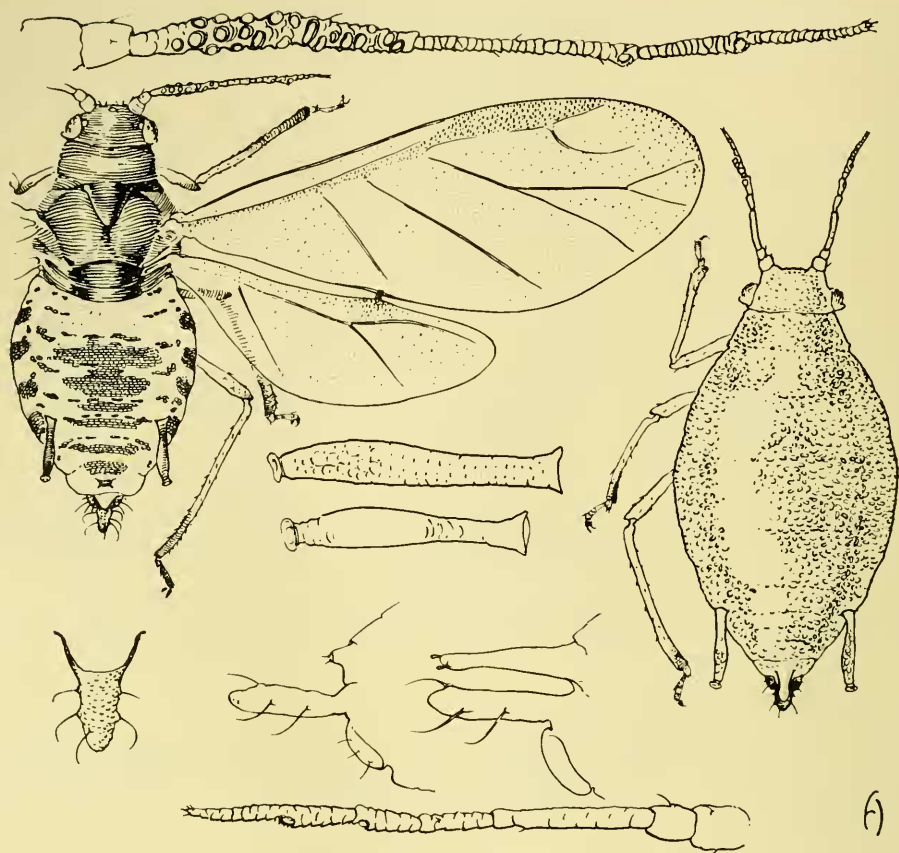


Figure 31. Parsnip and willow aphid, *Cavariella aegopodii* (Scopoli). Alate and apterous parthenogenetic females and enlarged antennae, cornicles, caudas, and caudal tubercle of female (lateral aspect). (After Zimmerman, 1948.)

CHILE:

In Chile it appears to be widely distributed on umbelliferous plants and was collected as follows:

On an umbelliferous plant, at La Ligura, Province of Aconcagua, December 14, 1950—apterae and alatae present in large numbers.

On anise or dill, *Anethum graveolens*, Angol, Province of Bio-Bio, January 1, 1951—many apterae and alatae.

On a wild host and by beating various plants at Hacienda San Andres, Purranque, Province of Osorno, January 15, 1951—apterae and alatae.

ARGENTINA:

Under the above specific name and also as *C. capreae* (Fabricius) this species has been recorded:

On *Apium* sp., *Daucus* sp., *Carum* sp., *Pastinaca* sp., *Pimpinella anisum* L., and *Salix* sp. (Blanchard 1925, pp. 14-16; 1944, pp. 31-32).

Specimens have been received from L. A. Bahamondes, collected on *Salix babylonica* L., Guaymallen, Province of Mendoza, November 28, 1951; many apterae and alatae.

Tribe **Myzini**Subtribe **Myzina****Myzus circumflexus** (Buckton)

Lily Aphid

(Figure 32)

Siphonophora circumflexa BUCKTON, 1876; *S. callae* HEINRICH, 1909; *Myzus vincae* GILLETTE, 1908.

This is a European species now widely distributed on lilaceous plants. The insect infests both the bulbs and foliage. The pale green or yellowish apterae have conspicuous dark markings on the dorsum of the abdomen.

CHILE:

A single apterous female was taken by beating at Purranque, Province of Osorno, January 15, 1951.

ARGENTINA:

This species has also been collected upon a number of hosts in the Province of Buenos Aires, by Blanchard (1922, pp. 213-4, fig. 15; 1939, p. 976; 1944, p. 43) as follows:

On *Citrus* sp., *Cyclamen* sp., *Tulipa* sp., and other Lilaceae, Orchidaceae, and *Vinca major* L.

Myzus ornatus Laing, 1932

Ornate Aphid

(Figure 33)

This species appears to have been introduced into England, where it was first noted on violets by Laing (1932) and described. Since then the writer has received specimens collected upon many host plants (Essig, 1938, 1939, 1947). It appears that this insect may be a native of South

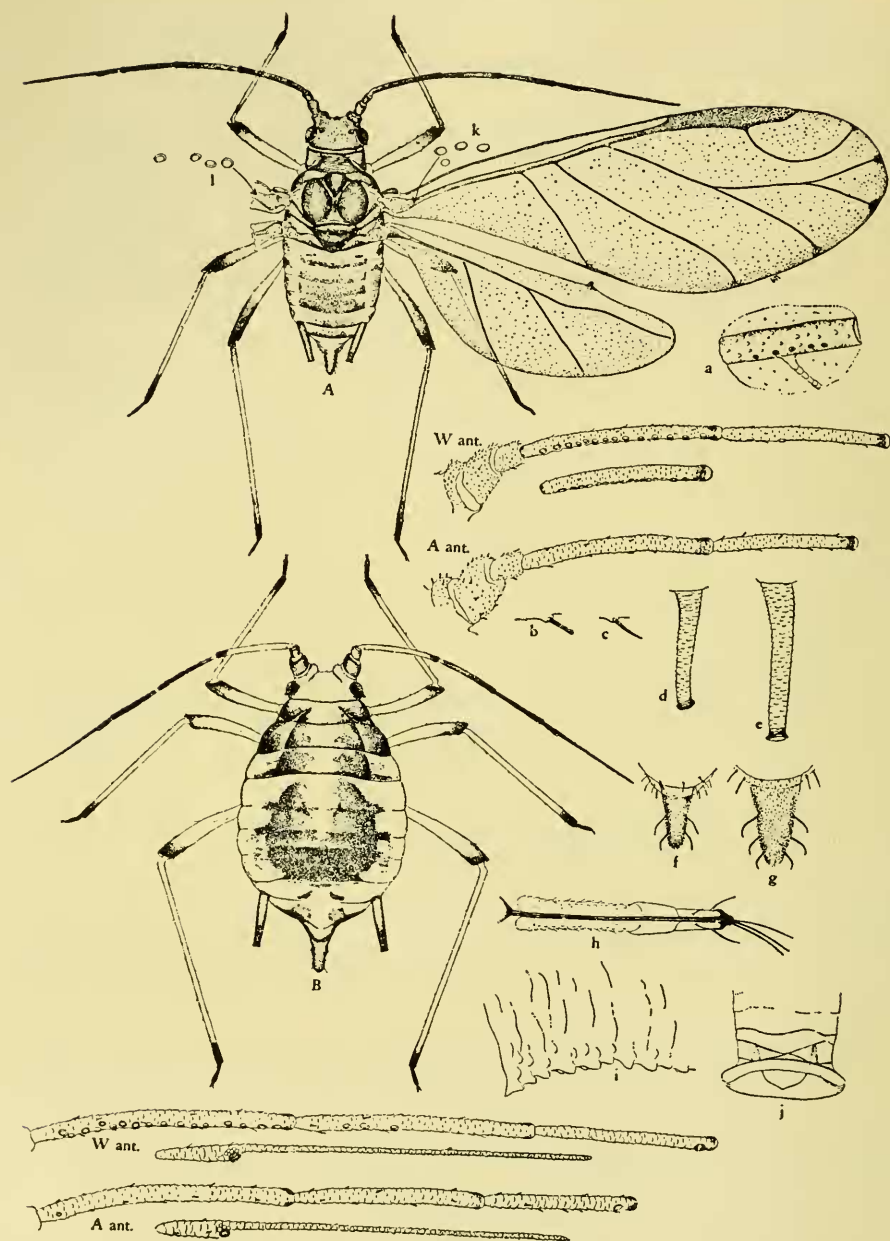


Figure 32. Lily aphid, *Myzus circumflexus* (Buckton). A, adult winged female; a, section of the costal vein showing fenestralike areas; d, cornicle; f, cauda; k and l, fenestras near the base of the subcostal vein; W, ant., antennae. B, adult apterous female: A, ant., antenna; b and c, setae on segments I and III of antenna; e, cornicle; g, cauda; h, rostrum; i, basal margin of cornicle; j, tip of cornicle. All greatly enlarged. A yellow and black species.

America where it is associated with plants of the genera *Fuchsia* and *Begonia* and perhaps other indigenous plants.

CHILE:

On *Cereus* sp., at Las Palmas, Province of Aconcagua, November 29, 1950, along with some other aphids.

On *Bignonia* sp., Antofagasta, November 21, 1950—3 apterae.

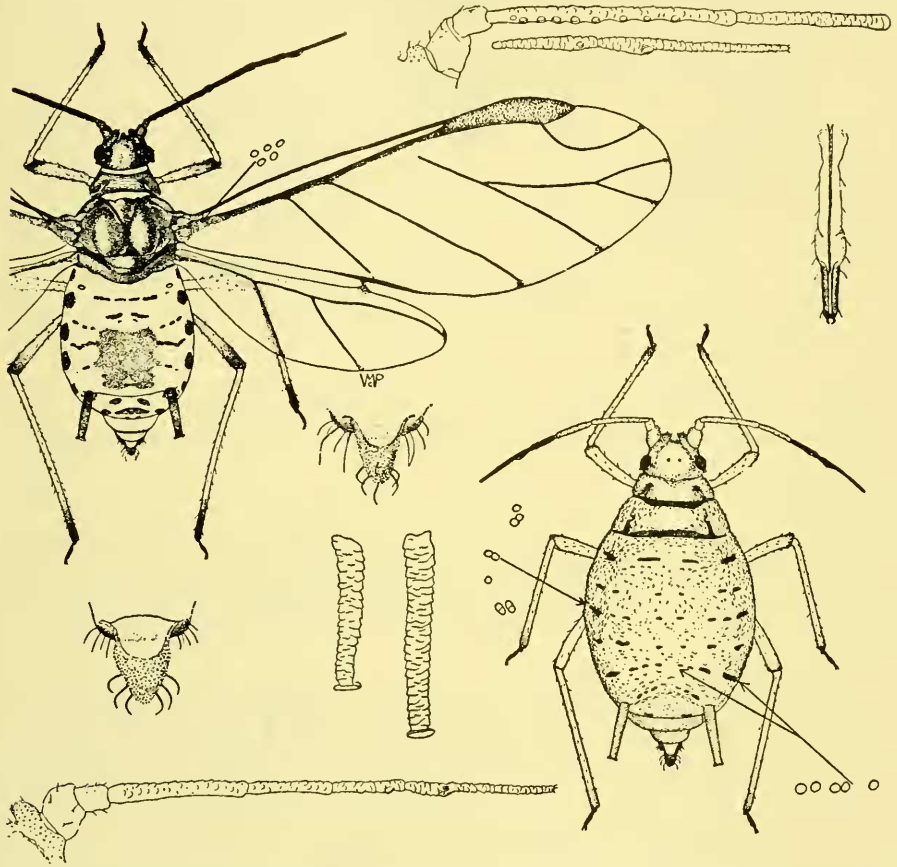


Figure 33. Ornate aphid, *Myzus ornatus* Laing. Alate and apterous parthenogenetic females with enlarged antennae, caudas, cornicles, and rostrum.

***Myzus persicae* (Sulzer)**

Green Peach Aphid

(Figure 34)

Aphis persicae SULZER, 1776; *Aphis dianthi* SCHRANK, 1801; *A. persicae* BOISDUVAL, 1867; *Myzus malvae* OESTLUND, 1886; *Phorodon cynoglossum* WILLIAMS, 1910; *Rhopalosiphum betae* THEOBALD, 1913.

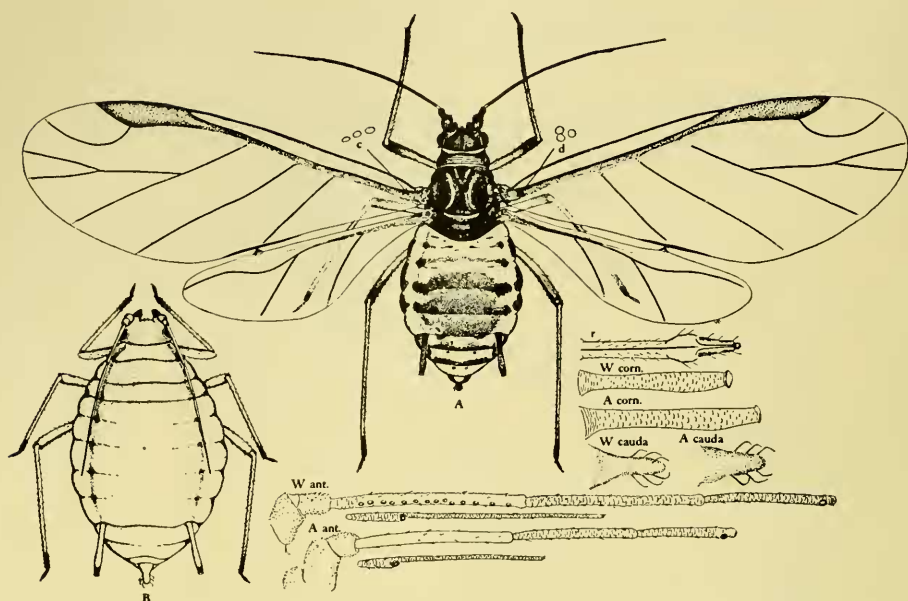


Figure 34. Green peach aphid, *Myzus persicae* (Sulzer). A, alate parthenogenetic female; B, apterous female. Enlarged rostrum; cornicles, caudas, and antennae. A yellow, green and black species.

This is one of the most widely distributed aphids and occurs on all the continents. It has an enormous number of host plants and is the most important aphid vector of plant virus diseases (Essig 1948b).

CHILE:

On *Datura* sp., Antofagasta, November 21, 1950—10 apterae.

On *Cereus* sp., Las Palmas, Province of Aconcagua, November 29, 1950—a few specimens, all apterae.

On wild morning glory, *Convolvulus* sp., Angol, Province of Bio-Bio, January 1, 1951—1 alate and 3 apterae.

ARGENTINA:

This aphid is widely distributed throughout this country and has been reported upon many host plants including:

Abutilon sp., *Antirrhinum* sp., *Bellis* sp., *Beta* sp., *Brassica* sp., *Cannabis sativa* L., *Capsicum* sp., *Chenopodium* sp., *Cineraria* sp., *Cosmos* sp., *Cuminum cyminum* L., *Cynara* sp., *Descurainia appendiculata* (Gris.), *Dianthus* sp., *Lonicera* sp., *Malva* sp., *Pimpinella anisum* L., *Prunus* spp., *Pyrus* sp., *Senecio* sp., *Solanum*

spp., *Tulipa* sp., *Vinca* sp. (Blanchard 1922, pp. 211-213, fig. 13; 1939, pp. 980-981; 1944, p. 43).

The writer has also received specimens from L. A. Bahamondes, collected by him as follows:

On alheli, stock or gilliflower, *Matiola incana* L., Mendoza Capital, October 3, 1948—4 alatae.

On *Begonia*, Mendoza Capital, March 7, 1949—many specimens.

On nettle, ortiga, *Urtica urens*, Godoy Cruz, Mendoza Capital, November 20, 1950.

On *Tulipa* sp., at Mendoza, October 13, 1950—1 aptera and 1 alate.

On *Rumex* sp., Mendoza, Guaymallen y Capital, November 1, 1950—several specimens

On *Barnadesia odorato* (?) Mendoza Capital, November 1, 1950—many specimens.

BOLIVIA:

On cultivated potato (patata, papa), at Camargo, February 22, 1951—2 apterae.

PERU:

On caper-bush, *Capparis spinosa*, Botanical Garden, Lima, November 14, 1950—2 apterae and 1 alate.

On *Phlox* sp., Lima, November 15, 1950—many apterae.

On tobacco, *Nicotiana* sp., Botanical Garden, Lima, November 14, 1950—1 alate.

On *Solanum* sp., Callao, November 14, 1950—2 alates.

On potato, *Solanum tuberosum*, Callao, November 16, 1950—1 alate and 3 apterae.

On *Datura* sp., Botanical Garden, Lima, November 14, 1950—2 alatae and 4 apterae.

By beating nightshade, *Solanum* sp., Andahuaylas, Province of Apurimac, March 7, 1951—6 apterae and 1 alate.

On cultivated potatoes, Sienani, Province of Cusco, March 2, 1951—4 alates.

On thorny tree by beating, Abancay, Province of Apurimac, March 6, 1951—1 aptera.

By beating, Rio Pampas, Province of Ayacucho, March 8, 1951—3 apterae.

Tribe **Cryptomyzini****Capitophorus braggi** (Gillette)

Artichoke Aphid

(Figure 35)

Myzus braggi GILLETTE, 1908.

This pale yellow and greenish aphid often appears in overwhelming numbers on artichoke and other hosts.

CHILE:

On artichoke (aleauail) *Cynara scolymus*, San Carlos, Province of Nuble, December 23, 1950. Many apterae and a few alatae.

No host record; 50 km. east of San Carlos, Province of Nuble, December 25, 1950—4 alates. Collected by Dr. E. S. Ross.

ARGENTINA:

On artichoke (aleauail), *Cynara scolymus*, in the provinces of Buenos Aires, Santa Fe, San Juan and other localities. (Blanchard, 1935, 366-7; 1939, pp. 945-7; 1944, p. 34).

Tribe **Nasonoviini****Idiopterus nephrolepidis** Davis

Fern Aphid

(Figure 36)

A small black and white-marked aphid with clouded wings. It feeds upon various species of ferns (*helecho*, *polipodio*) (Polypodiaceae) in tropical and subtropical areas.

CHILE:

A single alate specimen was taken by sweeping 40 km. east of San Carlos, Nuble Province, December 24, 1950, by Dr. A. E. Michelbacher.

ARGENTINA:

Blanchard (1939, pp. 41-42) records this species on (*Acrostichum*), *Adiantum*, *Nephrolepis*, and other cultivated ferns in the Province of Buenos Aires.

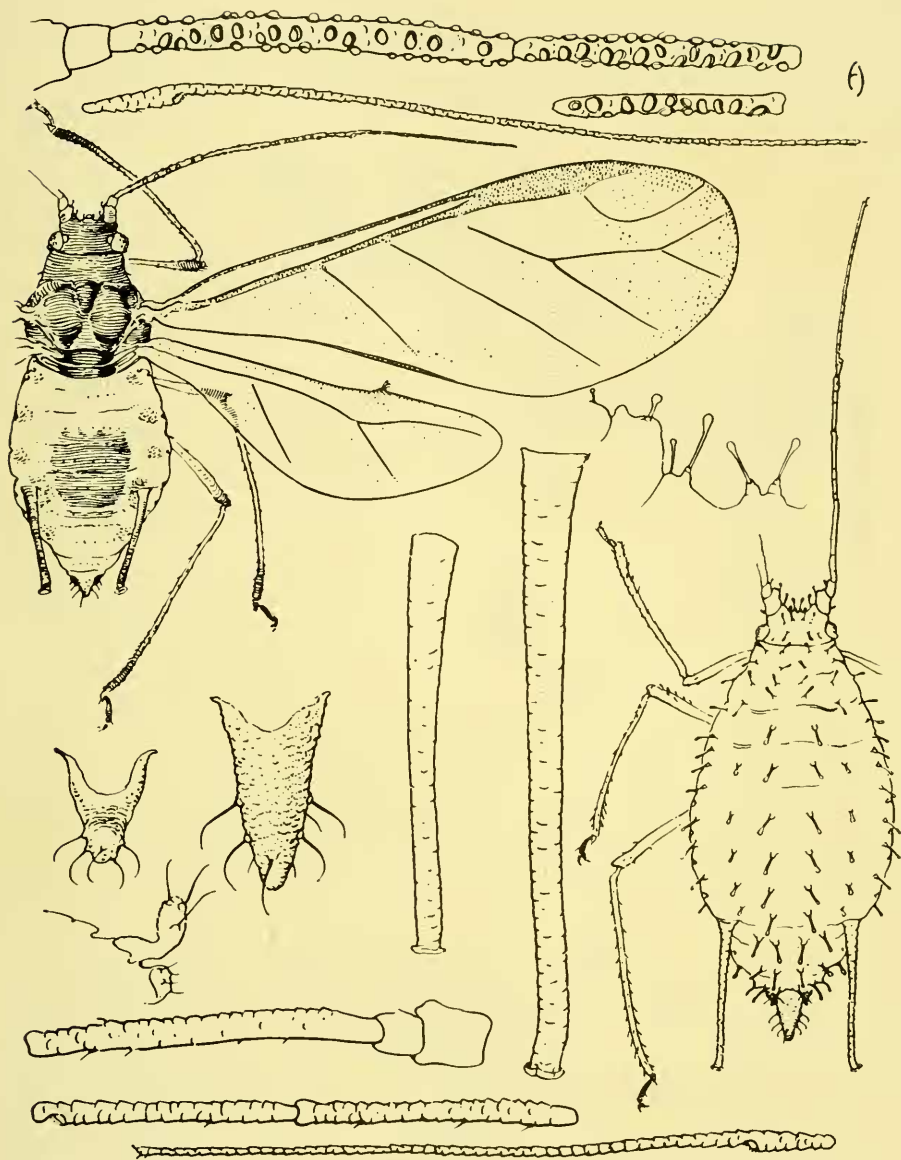


Figure 35. Artichoke aphid, *Capitophorus braggi* (Gillette). Alate and apterous parthenogenetic females with enlarged antennae, caudas, and cornicles and capitate hairs or setae on the front of the head of the aptera. Alates green and black; aptera pale green. (After Zimmerman, 1948.)

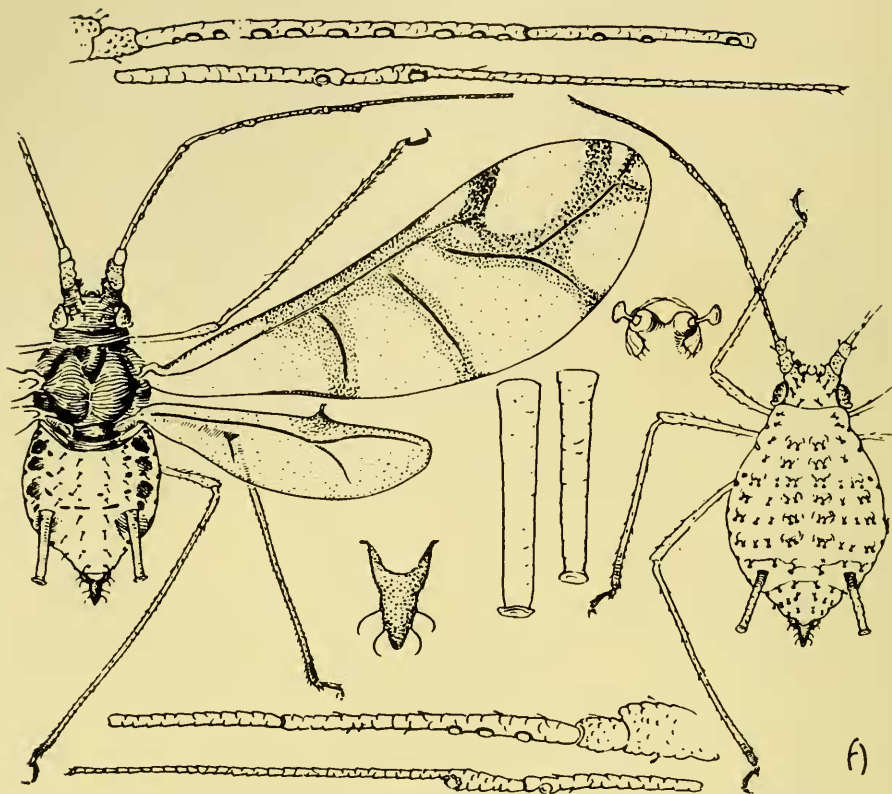


Figure 36. Fern aphid, *Idiopterus nephrolepides* Davis. Alate and apterous females; antennae and cornicles of each; cauda of alate; and body tubercle of apterous female. (After Zimmerman, 1948.)

Subfamily **DACTYNOTINAE**

Tribe **Aulacorthini**

Subtribe **Microlophiina**

Acyrtosiphon onobrychis (Boyer de Fonscolombe)⁴

Pea Aphid

(Figure 37)

4. The nomenclature of this species has been the object of some concern of aphidologists. Although the above designation is now generally accepted, the eminent aphidologist D. Hille Ris Lambers (1947, p. 247), uses *Acyrtosiphon pisum* (Harris). Moses Harris (1776, pp. 66-67, pl. XIII, fig. 5), gives a brief description and a colored illustration of what is without doubt this insect, but there may be some question as to whether these constitute a valid description of a new species. This name was listed in Sherborn's "Index Animalium" (1902, p. 756), but I know of no other references to it—not even in the extensive bibliography listed by Lambers.

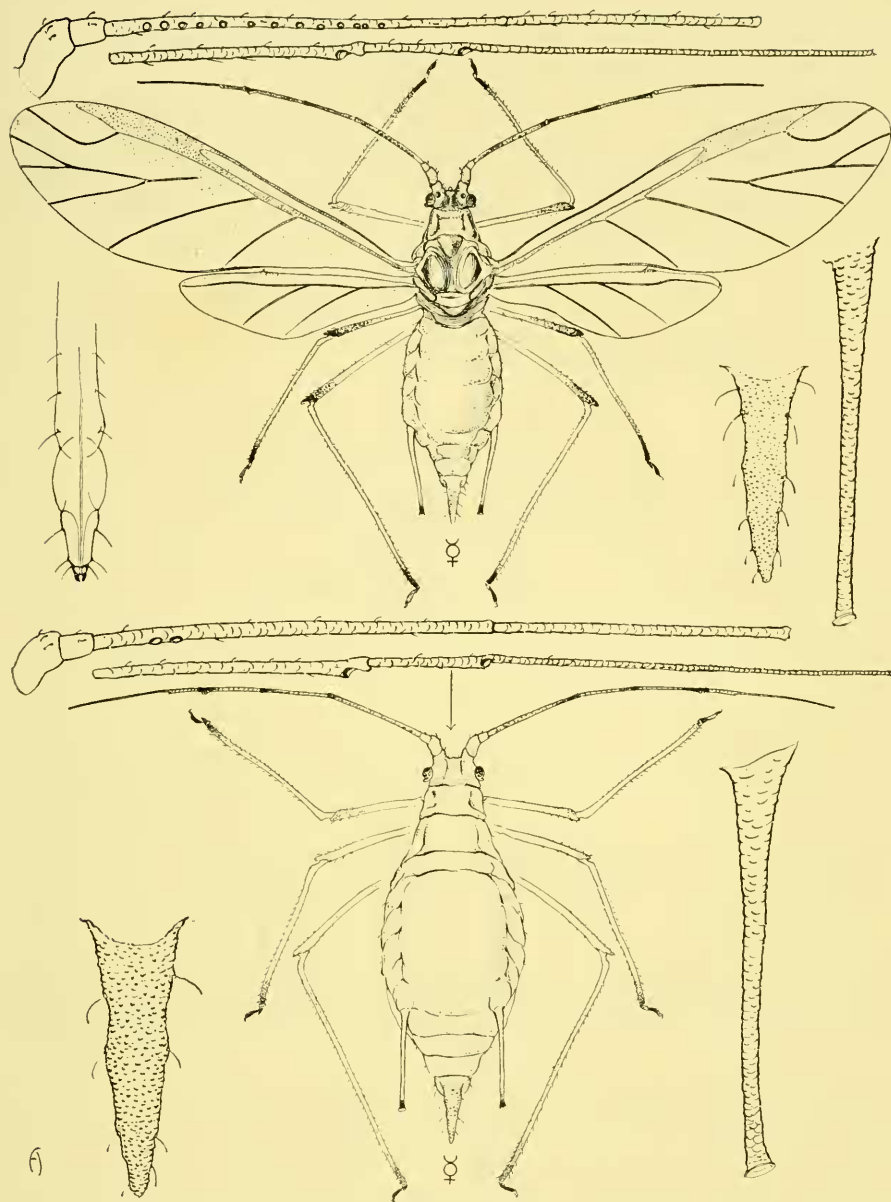


Figure 37. Pea aphid, *Acyrtosiphon onobrachis* (Fonscolombe) [*Macrosiphum pisi* (Kaltenbach)]. Alate parthenogenetic female and enlarged antenna, rostrum, cauda and cornicle at top; apterous female and cauda and cornicle at bottom. Apex of cornicle is not reticulated. Green.

Aphis pisum M. HARRIS, 1776; *A. onobrychis* BOYER DE FONSCOLOMBE, 1841; *A. lathyri* MOSLEY, 1841; *A. pisi* KALTENBACH, 1843; *Siphonophora ononis* KOCH, 1855; *Nectarophora destructor* JOHNSON, 1900; *Macrosiphum trifolii* PERGANDE, 1904; *Macrosiphum pisi* PATCH, 1911.

This large green aphid has a cosmopolitan distribution and is often a very serious pest of plants belonging to the Leguminosae. However, it does not yet appear to be widely distributed in western South America. Only one specimen was taken.

PERU:

Sweeping legumes at Mollendo, Province of Arequipa, November 19, 1950—a single apterous female.

Subtribe **Metopolophiina**

Aulacorthum pelargonii (Kaltenbach)

Geranium Aphid

Aphis pelargonii KALTENBACH, 1943; *A. malvae* WALKER, 1848-9.

This species was collected only twice as follows:

PERU:

On *geranium*, at Lima, November 15, 1950—4 apterae.

On *Solanum* sp., Callao, November 14, 1950—1 alate.

Aulacorthum pseudosolani (Theobald)

Solanum or Foxglove Aphid

(Figure 38)

Aphis solani KALTENBACH, 1843; *Macrosiphum solani* THEOBALD, 1913, *Myzus veronica* THEOBALD, 1913; *M. hydrocotylei* THEOBALD, 1925; *M. pseudosolani* THEOBALD, 1926; *M. veronicellus* THEOBALD, 1926.

This aphid is widely distributed and has many host plants, but there were only two collections:

CHILE:

On a wild umbelliferous plant and by beating various plants at Purranque, Province of Osorno, January 15, 1951—1 alate and 7 apterae.

On wild potato at the same place on January 26, 1951—1 alate and 8 apterae.

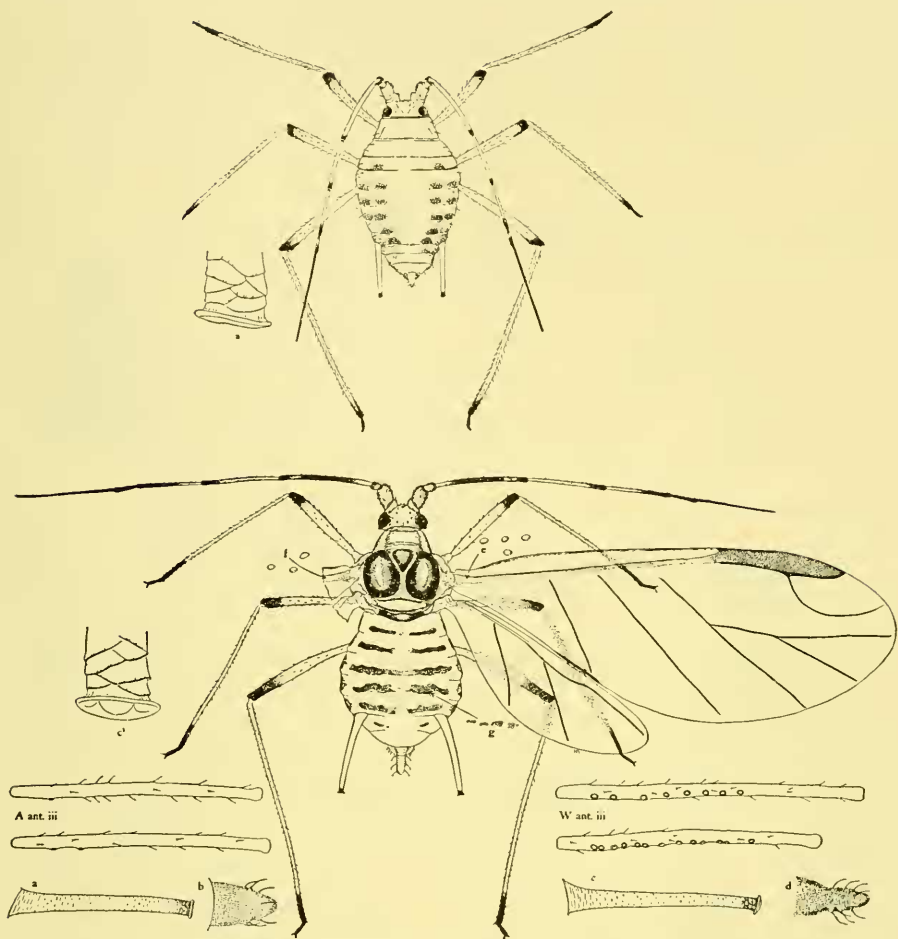


Figure 38. Solanum or foxglove aphid, *Aulacorthum pseudosolani* (Theobald) (= *Myzus solani* (Kaltenbach)). Apterous and winged parthenogenetic females with enlarged antennal segment III, cornicles and cauda. A, refers to apterous and W, for winged.

Tribe **Macrosiphonini**

Subtribe **Macrosiphonina**

Macrosiphum⁵ *ambrosiae* (Thomas)

Ambrosia Aphid

(Figure 39)

Siphonophora ambrosiae THOMAS, 1877.

5. The spelling of the generic name *Macrosiphum* Passerini, 1860, was corrected to *Macrosiphon* to conform to the Latin word *siphon* by Del Guercio in 1913. (Redia IX, p. 187, 1913.) However, this change does not conform to the present rules and regulations of the International Committee on Zoological Nomenclature.

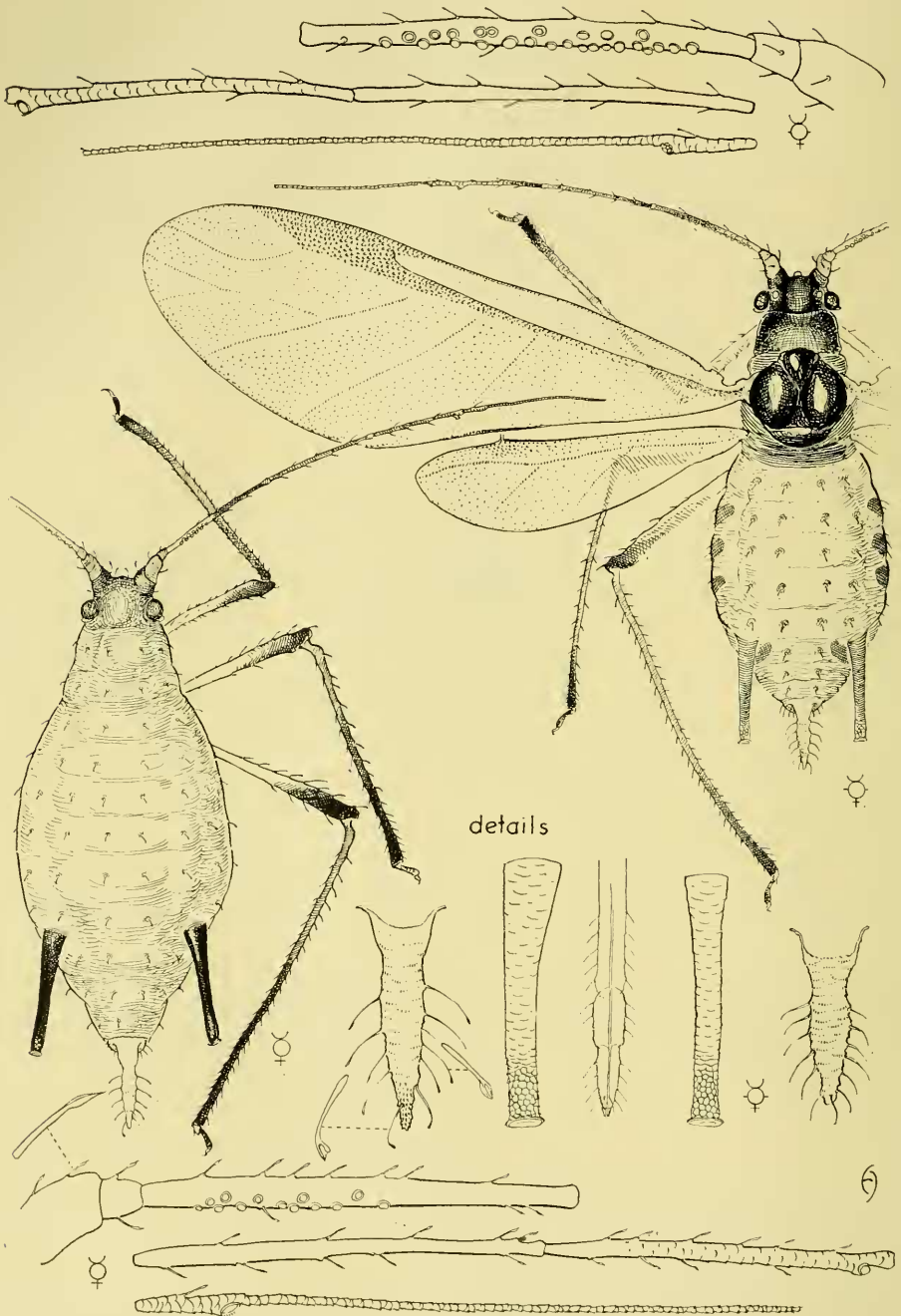


Figure 39. Ambrosia aphid, *Macrosiphum ambrosiae* (Thomas). Alate and apterous parthenogenetic females with enlarged antennae, caudas, cornicles and rostrum. Dark red and black.

This species is common and abundant in North America. It seems also to be widely distributed in South America. It is possible to confuse it with closely related species all of which form a complex that needs much investigation work.

CHILE:

On *Artemisia* sp. ?, Papudo, Province of Aconcagua, November 28, 1950—5 apterae.

On *Baccharis* sp. ?, Rivadavia, Province of Coquimbo, December 4, 1950—many apterae.

On *Baccharis* sp. ?, Junta, Province of Coquimbo, December 6, 1950—many apterae.

On *Baccharis* sp. ?, Concon, Province of Valparaiso, December 16, 1950—5 apterae.

On a grindelia-like plant, 40 km. east of San Carlos, Province of Nuble, December 23, 1950—11 apterae.

On *Baccharis* sp. ?, Tucapel, Province of Bio-Bio, December 28, 1950—22 apterae.

On *Baccharis* sp. ?, Hacienda San Andres, Purrunque, Province of Llanquihue, January 15, 1951—many apterae and alatae.

On *Baccharis* sp. ?, Los Muermos, Province of Llanquihue, January 18, 1951—many alates and apterae.

Beating along the mouth of the Maullin River, Province of Llanquihue, January 22, 1951—2 alates.

ARGENTINA:

On *Artemisia* sp. ?, Salta, Province of Salta, February 14, 1951—many apterae.

On acacia-like tree (finely divided compound leaves), Salta, February 14, 1951, many specimens, all apterae.

On *Artemisia* sp. ?, Salta, February 14, 1951—6 apterae.

PERU:

On *Chrysanthemum* sp., Botanical Garden, Lima, November 13, 1950—many apterae.

On *Encelia* sp., Botanical Garden, Lima, November 13, 1950—many alatae and apterae.

On tobacco, *Nicotiana* sp., Botanical Garden, Lima, November 14, 1950—2 alatae.

On *Gerbera jamesonii*, Botanical Garden, Lima, November 14, 1950—2 alatae and 12 apterae.

On *Picris* sp. ?, Botanical Garden, Lima, November 13, 1950—many apterae.

Macrosiphum bonariensis Blanchard

Composite Aphid

This fine species was collected on *Tanacetum vulgare* L. at Flores and Lomas de Zamora, Argentina, by Blanchard (1912, pp. 205-6, fig. 10). It was raised to species status by the same author (1932, pp. 19-21, fig. 10) and more completely described by him from additional specimens collected on cultivated *Pyrrethrum*, Buenos Aires; and again on *Tanacetum vulgare* L., from the Province of Buenos Aires y Cordoba, Argentina (1939, pp. 953-55).

CHILE:

A fine series of this species was collected by the Michelbachers on a member of the Family *Compositae* near San Carlos, Province of Nuble, December 23, 1950. It appears to fall in the genus *Pharalis* Leach according to the classification by Lambers (1929).

Macrosiphum chilensis Essig, new species

Chilean Baccharis Aphid

(Figure 40)

TYPE: *Alate parthenogenetic female*: Color not indicated—possibly yellowish or greenish. Cleared specimens show the head, rostrum, and antennae; apical portions of the femora and tibiae; the cornicles, excepting the base; and portions of the cauda and caudal plates, dusky or blackish. The frontal tubercles are small. Antennae slightly longer than the body; segment I somewhat gibbous and much larger than II; III a little more than half as long as VII, with few short spine-like hairs and with 14-17 variable circular secondary sensoria distributed irregularly or almost in a straight line over the basal three-fourths of the segment; VII with short base and long, slender unguis. (In paratypes the number of sensoria on antennal segment III may vary from 13 to 20.) Rostrum extends to the second coxae. Wings as drawn. Legs rather slender. Abdomen with many very fine and a few short, stout spines, the bases of the latter surrounded by prominent dark patches somewhat like in *Macrosiphum ambrosiae* (Thomas). Cornicles cylindrical, slightly tapering; bases about twice as wide as the opening, slightly swollen anteriorly; the apical reticulated area may be slightly, but not usually, constricted; reticulations pronounced

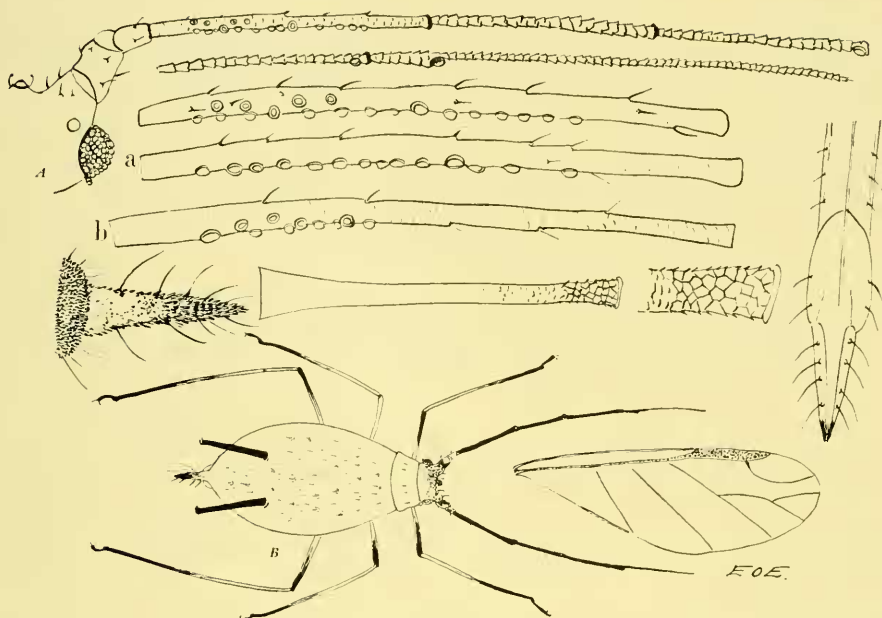


Figure 40. Chilean baccharis aphid, *Macrosiphum chilensis* Essig, new species. A, alate and B, apterous parthenogenetic genetic females; a, antennae of alate; b, antenna of aptera; cauda, cornicle, rostrum and wing of alate. Very dark.

and similar to those of *M. solanifolii* (Ashmead), but the constriction is not as noticeable; dusky except the basal one fourth. The anal plate is very small. Cauda 0.8 mm. in length and tapering as shown. Length of body 3.00 mm.; antennae 0.33 mm.; forewing 4 mm.; cornicles 0.8 mm.; cauda 0.5 mm.

Apterous parthenogenetic female: Of a uniform color and with darkened antennae, legs, rostrum, cornicles, cauda, and caudal plate and small areas at bases of thickened spines much as in the alate form. Antennal segment III has from 8–15 circular sensoria of various sizes and limited to the basal third or half of the segment—the average number is about 11 to 12. It is rarely that the same number occurs on both antennae of a given individual. Length of body 3.5 mm.; width 1.6 mm.; antennae 3.5 mm.; cornicles 0.8 mm.; cauda 0.6 mm.

This species somewhat resembles *M. solanifolii* (Ashmead) but differs in having the secondary sensoria more scattered on III in the alatae and many more on III in the apterae; and in having much darker or black antennae and cornicles.

Host plant and locality: This species was collected on *Baccharis* sp. (?), at **La Serena, Province of Coquimbo, Chile**, December 8, 1950, by Dr. A. E. Michelbacher.

In all, 4 alates, 25 apterae, and 5 immature individuals as well as one cast skin were taken. These are mounted on 5 aluminum microscope slides. The alate type is mounted on a slide with 4 mature apterous paratypes.

Macrosiphum cordobensis Blanchard

Cordobens Aphid

(Figure 41)

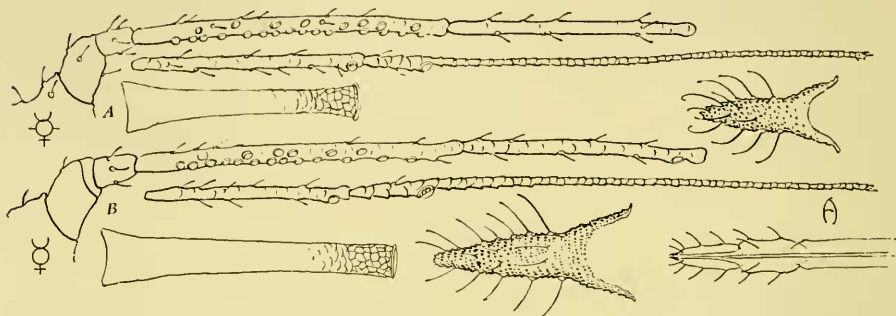


Figure 41. Cordobens aphid, *Macrosiphum cordobensis* Blanchard. Upper—A, antenna, cornicle and cauda of alate parthenogenetic female; B, antenna, cornicle cauda, and rostrum of aptera.

ARGENTINA:

On *Baccharis* sp. (?), at 4,000 feet on a ridge west of Tucuman, February 11, 1951—many apterae and alatae.

On *Erigeron* sp., Sierras de Cordobe, February 18, 1931. Original description. (Blanchard, 1932, pp. 24–36, fig. 4; 1939, pp. 963–4.)

PERU:

On potato (papa) (casual?), Sicuani, Province of Cusco, 3,000 feet—1 apterous.

Macrosiphum edrossi Essig, new species

Ross Aphid

(Figure 42)

TYPE: *Alate parthenogenetic female*: A yellowish or greenish species with the head, thorax, and all appendages brown or black. The cleared abdomen is void of any pigmented markings but has many fine hairs. The antennae are 4 mm. in length and longer than the body, slender, with short knobbed hairs, and segment III with 15–17 large and small circular secondary sensoria arranged in a row along the underside throughout the full

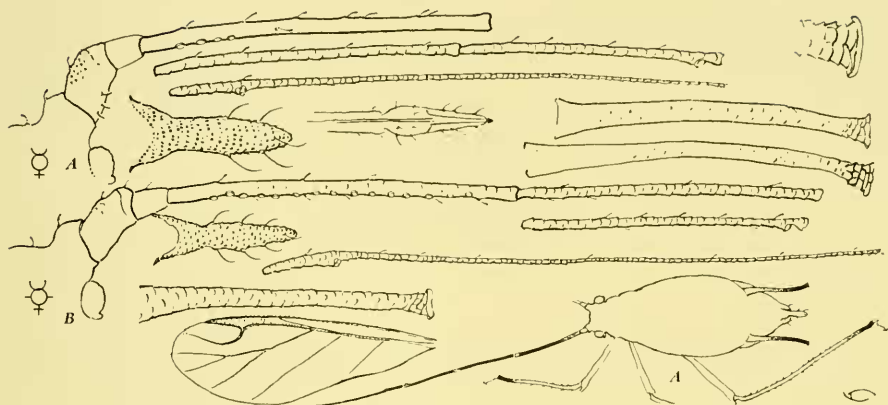


Figure 42. Ross aphid, *Macrosiphum edrossi* Essig, new species. A, antenna, cauda, rostrum and three drawings of cornicle and outline of the apterous parthenogenetic female; B, antenna, cauda, cornicle and wing of alate.

length. (In paratypes the number frequently varies for each individual as 15-17, 16-18, 15-16, etc.) The unguis of segment III is very long. The rostrum is slender, with few hairs and extends to or slightly beyond the second coxae. The legs are long and slender. The forewings are normal with venations as drawn; 4 mm. in length. The stigma is relatively long. The cornicles are black apically, long and slender, slightly curved outwardly, somewhat constricted near tips and reticulated for a very short distance at the apex where it is considerably widened. In this respect it differs from most members of the genus. The apical flaring is somewhat after the pattern of the pea aphid, *Acyrtosiphon onobraxis* (Boyer de Fonscolombe) (*Macrosiphum*), but in the pea aphid the reticulations are absent; length 0.7 mm. The cauda is rather robust, flaring at base and then slightly constricted; 0.35 mm. in length, with six hairs. The anal plate is very small and crescent-shaped. Length of body, 3 mm.

Apterous parthenogenetic female: Pale with dusky appendages and without any distinctive markings and with numerous small colorless hairs. The general characteristics are similar to those of the alate form. Antennal segment III has a variable number of basal secondary circular sensoria. This variation may best be expressed by the following examples per individual, 2-3, 3-3, 3-5, 4-2, 4-4, 5-5, 6-9, 8-5, 8-6, 8-8, etc. The cauda is more robust than that of the alate. Length of body, 2.70 mm.; antennae 2.70 mm.; cornicles 0.85 mm.; cauda 0.35 mm.

Host plant and locality: Collected on what appears to be a nettle (ortiga), *Urtica* sp., at **Rio Pampas, Peru**, March 8, 1951, by Dr. Michelbacher.

Type: An alate form mounted on a slide with 4 apterous females. The

remaining 6 alates and all the 24 apterous forms are mounted on 6 other slides and are designated as paratypes.

This species differs from others in having the apices of the cornicles reticulated and flaring; an extremely long antennal filament; and only 2 or 3 pairs of hairs on the cauda.

Macrosiphum griersoni Blanchard

Grierson Aphid

ARGENTINA:

This species was described by Blanchard (1932, pp. 27-29, fig. 5) from the artichoke (aleachofa, areacil, agnaturma), *Cynara scolymus* L., Jujuy and Buenos Aires, in 1924, and on *Vernonia* sp., Sierra de Cordoba.

CHILE:

A single alate specimen of what appears to be this species was collected by the Michelbachers on a composite, San Carlos, Province of Nuble, December 23, 1950.

An adult alate collected by sweeping at Angol, Province of Malleco, January 29, 1951.

Macrosiphum huantana Essig, new species

Huanta Aphid

(Figure 43)

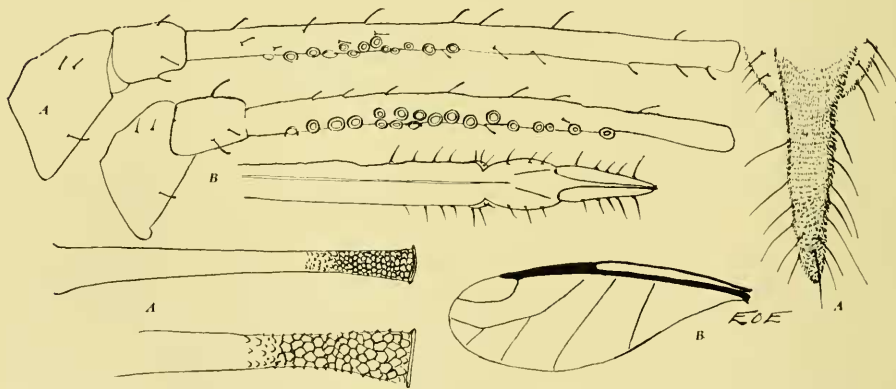


Figure 43. Huanta aphid, *Macrosiphum huantana* Essig, new species. A, antenna, cornicles, and cauda of the apterous parthenogenetic female; B, antenna, rostrum and wing of alate.

TYPE: *Alate parthenogenetic female*: A dark species remaining brownish when cleared and mounted; without definite pigmented areas, but with the appendages dark brown. Antennae slender with few blunt or

knobbed hairs: secondary sensoria on segment III variable in size and scattered over the basal half or two thirds; varying in number from 17 to 19. (In paratypes they vary in number after this pattern: 13-13, 17-19, 17-19, in the three alates available.) They are longer than the body, 4.20 mm. Rostrum long and slender with many small hairs or spines; extending to the third coxae. Wings 4 mm. long; clear; venation as drawn. Legs slender. Cornicles dark, long and cylindrical; widening basally and apically; apical one-fourth reticulated; length 0.75 mm. Cauda brownish, long, slender, gradually tapering posteriorly; 12-14 hairs present; 0.40 mm. long. Anal plate rounded, twice the width of the base of the cauda, with many long spines.

Apterous parthenogenetic female: Dark in color with all appendages brownish in cleared specimens; without definite pigmented areas. Secondary sensoria on antennal segment III variable in size and number; usually limited to the basal half of the segment; ranging in number from 8 to 16 after the pattern: 7-8, 7-9, 10-10, 12-12, 12-15, 16-16. Length of body 3.50 mm.; antennae 4.50 mm.; cornicle 0.80 mm.

Host plant and locality: Collected on *Baccharis* sp. along the Rio Turbio, branch of the Rio Elqui **five miles south of Huanta** (Guanta), **Province of Coquimbo, Chile**, December 7, 1950, by Dr. A. E. Michelbacher.

This species is close to *M. littoralis* Blanchard, but has more sensoria and hairs on rostrum and cauda and cornicles flaring at apices.

This species also differs from other related species in having the extremely long cauda and the long, slender rostrum.

Altogether 30 specimens were taken: 3 alatae and 27 apterae. The type specimen is an alate mounted on a slide along with another alate and three adult apterae paratypes. All other specimens are also designated as paratypes.

Macrosiphum lizerianum Blanchard

Lizer Aphid

A single apterous female of what appears to be this aphid was taken by sweeping.

CHILE:

At Zapallar, Province of Aconcagua, November 27, 1950.

ARGENTINA:

Blanchard (1922, pp. 185-7, fig. 1) collected this aphid on *Sonchus* sp., *Cosmos* sp., *Aster* sp., *Wedelia glauca*, and species of *Compositae* at Punta Chica, San Isidro, Flores and Cañuelas, Province of Buenos Aires, and at Potrerillos and Cachueta, Province of Mendoza. He states it is close to *M. solidaginis* (Fabricius).

Macrosiphum macolai Blanchard

Macola Aphid

(Figure 44)

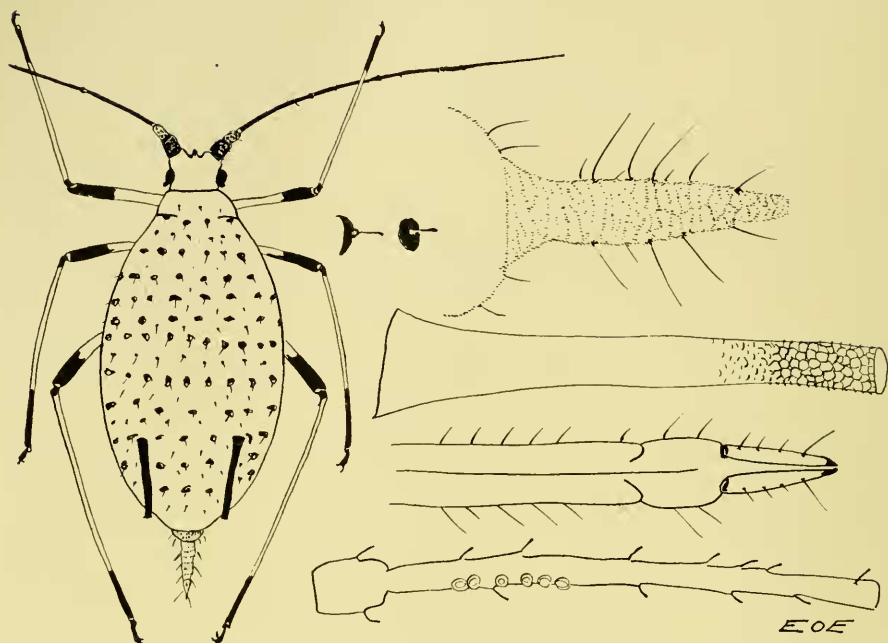


Figure 44. Macolai aphid, *Macrosiphum macolai* Blanchard. Apterous parthenogenetic female showing small knobbed setae arising from dark areas on the dorsum of the abdomen; cauda; cornicle; rostrum; and antennal segment III.

ARGENTINA:

On *Baccharis salicifolia* Mendoza, June 10, 1926. (Blanchard 1936, pp. 29-30, fig. 6. Original description: 1939, 966-7.)

On *Erigeron* sp. (chilea), Province of Mendoza, by Blanchard (1944, p. 42).

CHILE:

On the common dandelion, *Taraxicum vulgare*, at El Abanico, Province of Bio-Bio, December 30, 1950—1 aptera.

On *Baccharis* sp. ?, at Negrete, Province of Bio-Bio, January 30, 1951—27 apterae.

Macrosiphum muermosa Essig, new species

Muermos Aphid

(Figure 45)

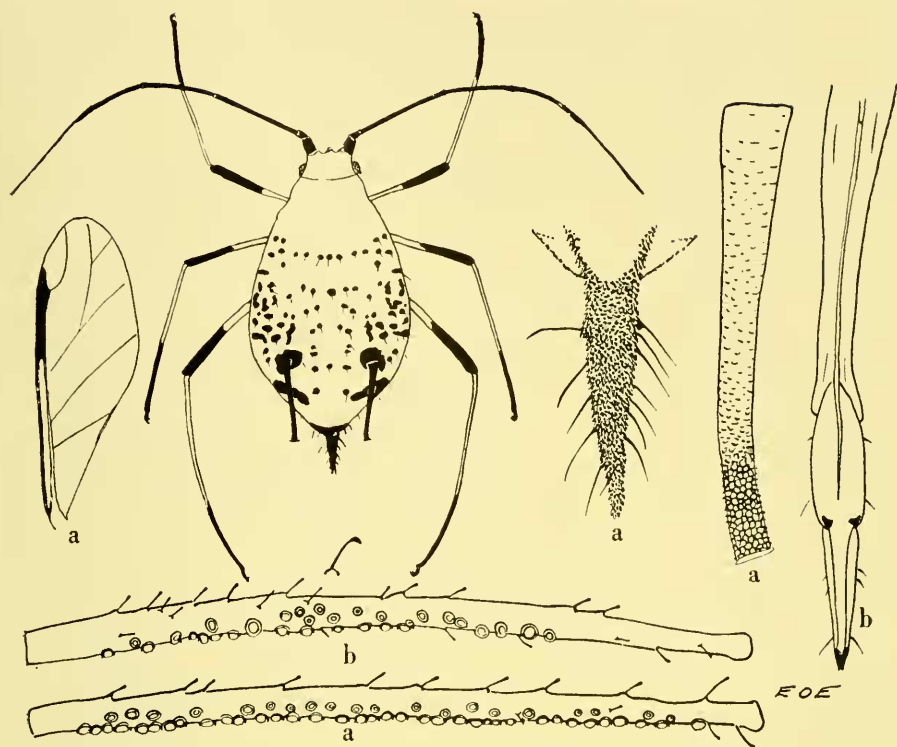


Figure 45. Muermos aphid, *Macrosiphum muermosa* Essig, new species. Apterous parthenogenetic female showing typical color pattern; a, wing, cauda, cornicle, and antennal segment III of alate; b, rostrum and antennal segment III of apterous female.

TYPE: *Alate parthenogenetic female*: Probably deep red, brown, and black—the alcoholic preserving fluid material was stained a very deep red-dish-brown color. Cleared specimens appear black, dark brown, and transparently colorless. The spines are short and knobbed. The antennae are curved; approximately the length of the body and extending to the tip of the cauda; dark to black in color; secondary sensoria only on segment III, circular to oval, rather small, quite variable in size, 43–44 in number and distributed throughout the full length, except the base and extremity; spines, short, curved, slightly knobbed. (Paratypes show a variation of from 39–49 sensoria on antennal segment III.) Rostrum slender with narrow apical segments; extends to or nearly to the third coxae; with few inconspicuous hairs. Legs slender; hind tibiae strongly curved; tarsi very small. Cornicles black; wider at base, nearly cylindrical, slightly curved outwardly; apical one fourth plainly reticulated; 1 mm. in length. Cauda

black, long, and well developed; with many hairs; 0.5 to 0.7 mm. long. Anal plate small and crescent shaped; with few rather long hairs.

Length of body 4 mm.; antennae 4.2 mm.; forewing 4 mm.; cornicles 0.75 mm.; cauda 0.50 mm.

Apterous parthenogenetic females: Dark reddish and black with the abdomen adorned with black, irregular markings. The antennae are slender, slightly longer than the body and curved. The spines are short, somewhat curved or straight and terminate in a knob or slightly enlarged. The sensoria on antennal segment III are quite variable in size, extend over much of the length as drawn, and range in numbers after the following pattern: 22-25, 25-30, 26-33, 29-29, 32-34, 36-36, etc. Other characters are similar to those in the alate. Length of body 4.5 mm.; antennae 4.2 mm.; cornicles 1 mm.; cauda 0.75 mm.

This species belongs to the group of dark-colored aphids which have short, stiff, spine-like hairs; long, slender, curving antennae; slender rostra; many variable secondary sensoria only on antennal segment III of both alate and apterous forms; and black pigmentation on the intersegmented, marginal, antesiphuncular, and other areas of the abdomen such as occur in *Macrosiphum ambrosiae* (Thomas), *Dactynotus picridis* (Fabricius), *D. taraxaci* (Kaltenbach) and many other related species.

Host plant and locality: Taken on a "yellow composite with long lance-like leaves, light pubescence on the undersurfaces giving silver color," at **Los Muermos, Province of Llanquihue, Chile**, by Dr. A. E. Michelbacher. Many specimens of both alate and apterous forms are mounted on 13 slides.

A single alate specimen, on a slide with two apterous females, has been designated as the type; all others as paratypes.

This species resembles somewhat *M. lizerianum* Blanchard, but differs in being larger; darker; with many more sensoria on antennal segment III in both alate and apterous forms, with a wide distribution of sensoria in the aptera; the slender cauda; and long, slender rostrum.

Macrosiphum nuble Essig, new species

Nuble Aphid

(Figure 46)

TYPE: *Apterous parthenogenetic female*: Color generally pale green (?); head, rostrum, antennae, most of the legs, cornicles, excepting the basal portions, cauda, dark or brownish. There are no body markings on the apterous form described but it is beset with rows of short spines arising from basal cones and curved (drooping) and knobbed. The antennae are long and slender with 13 to 16 small circular secondary sensoria irregularly arranged on the ventral basal fourth or third of the segment. (In paratypes the ratio on 4 specimens is 7-9, 9-13, 12-15, 13-15.) The

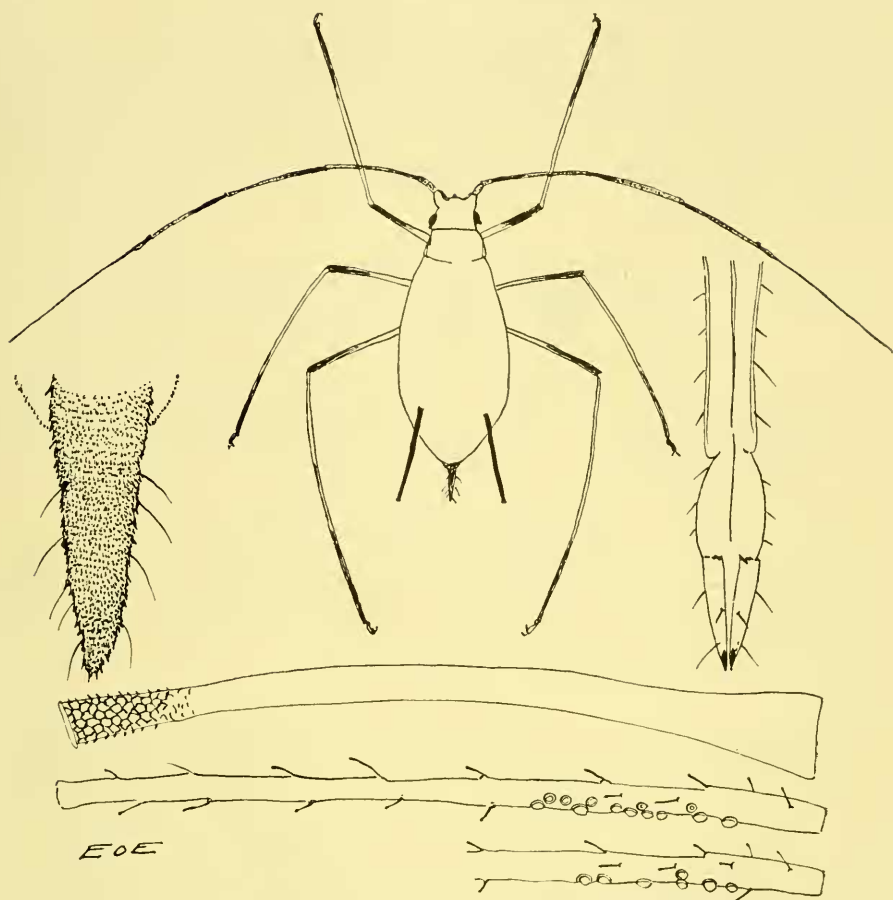


Figure 46. Nuble aphid, *Macrosiphum nuble* Essig, new species. Apterous parthenogenetic female and enlarged cauda, cornicle, rostrum and antennal segment III showing sensoria.

rostrum is short, reaching to the third coxae. The proportions of the various segments and the spination are illustrated. The cornicles are unusually long, 0.80 mm.; curved outwardly; cylindrical or slightly swollen, and reticulated, but not constricted apically. The cauda is relatively short, 0.30 mm., rather thick and with many spines. The anal plate is very small and semioval. Length of body 3.30 mm.

Host plant and locality: The species was collected on a composite plant in the Andes Mountains near **Fabian, Province of Nuble, Chile**, December 15, 1950, by Dr. A. E. Michelbacher.

The specimens consist of seven apterous females which are mounted on three slides. One individual is indicated as the type. All the others are designated as paratypes. No alates were collected.

This species resembles *Macrosiphum solanifolii* (Ashmead) in having the short rostrum and the apically reticulated cornicles, but differs in having a much larger number of secondary sensoria in the apterae which are irregularly arranged on the base of antennal segment III; by the much longer cornicles; by the more attenuated rostral apex; and the shorter, thicker cauda.

Macrosiphum rosae (Linnaeus)

Rose Aphid

(Figure 47)

Aphis rosae LINNAEUS, 1758; *A. scabiosae* SCOPOLI, 1763; *A. dipsaci* SCHRANK, 1801; *Siphonophora rosaeicola* PASSERINI, 1871; *Nectarophora valerianiae* CLARKE, 1903; *Macrosiphum centranthi* THEOBALD, 1915; *Macrosiphon rosae* (Linnaeus) BÖRNER, 1952.

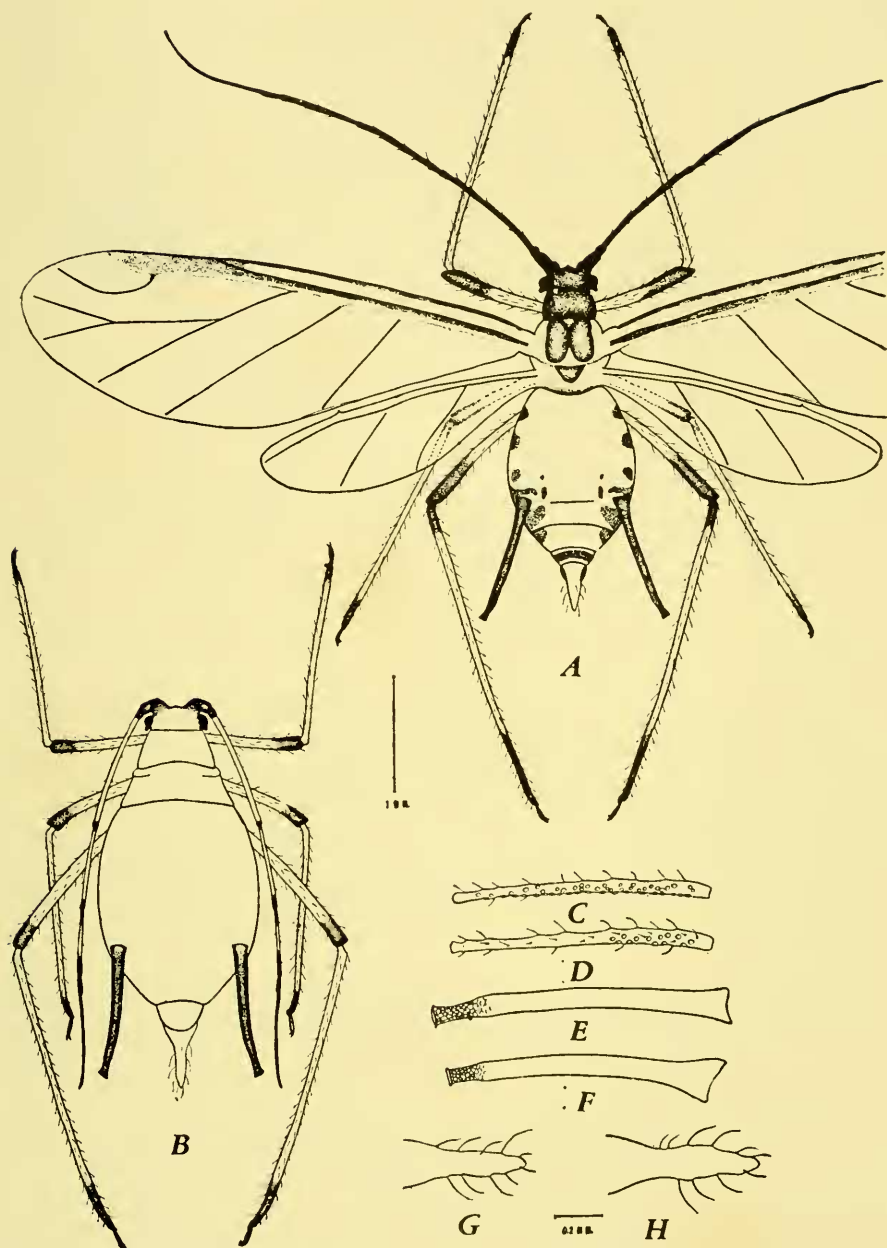
The rose aphid is almost a cosmopolitan species being widely distributed through commerce. It occurs usually on wild and cultivated roses and temporarily infests such other plants as *Camellia japonica*, *Dipsacus fullonum*, *D. sylvestris*, *Rudbeckia hirta*, and *Sonchus* spp. It is now well distributed in parts of South America.

CHILE:

- On cultivated rose, Valparaiso, November 26, 1950—1 alate and 6 apterae.
- On *Sonchus*, sp., Valparaiso, November 26, 1950—1 alate and 17 apterae.
- On cultivated rose, Vienna, Province of Coquimbo, December 4, 1950—apterae and alatae.
- On beans, *Phaseolus* sp., San Carlos, Province of Nuble, December 23, 1950—1 alate—casual ?.
- On rose, Temuco, Province of Cautin, January 6, 1951—apterae and alatae.
- Sweeping peafield, Lautaro, Province of Cautin, January 6, 1951—1 apterae and 1 alate.
- On *Sonchus* sp., Rio Bueno, Province of Valdivia, January 14, 1951—1 apterous.

PERU:

- On cultivated rose, Lima, July 15, 1937. Collected by Mrs. Selma Gahl—1 alate and 4 apterae. In author's collection.
- On cultivated rose, Botanical Garden, Lima, November 13, 1950—abundant; many apterae and 1 alate.



H. O. ESSIG.

Figure 47. Rose aphid, *Macrosiphum rosae* (Linnaeus). A, alate parthenogenetic female; B, apterous female; C, antennal segment III of alate showing sensoria; D, antennal segment III of aptera; E, cornicle of alate; F, cornicle of aptera; G, cauda of alate; H, cauda of aptera.

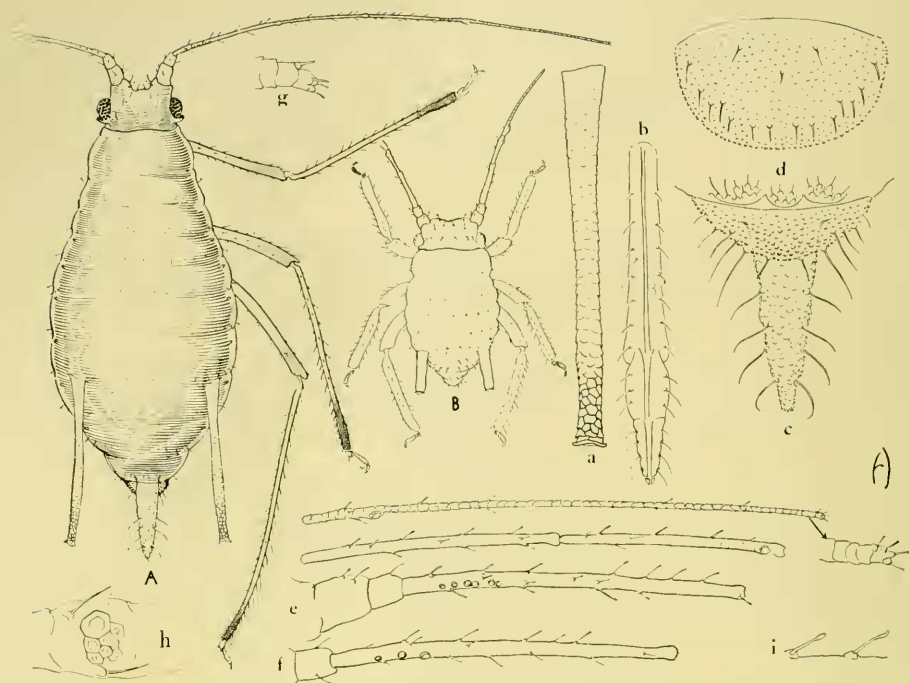


Figure 48. Potato aphid, *Macrosiphum solanifolii* (Ashmead). A, apterous parthenogenetic female with enlarged: a, cornicle; b, dorsum of rostrum; c, cauda; e, antenna; f, another antennal segment III. B, first instar young; g, tip of the antenna of same; h, sensoria in the process on antennal segment VI of embryo; i, enlarged antennal setae.

On cultivated rose, Chiclayo, Province of Lima, March 21, 1951—many specimens; all apterae.

ARGENTINA:

Common on cultivated roses throughout Argentina and also on loquat (nispero) *Eriobotrya japonica*. (Blanchard 1922, pp. 187–190, fig. 2; 1939, pp. 967–9).

***Macrosiphum solanifolii* (Ashmead)**

Potato Aphid

(Figures 48–49)

Siphonophora solanifolii ASHMEAD, 1882; *S. euphorbiae* THOMAS, 1878; *Macrosiphum cucurbitae* DEL GUERCIO, 1913; *Macrosiphum gei* (Koch) HOTES AND FRISON, 1931; *Macrosiphon solanifolii* (Ashmead) BÖRNER, 1952.

This is a very widely distributed Holarctic species and appears to

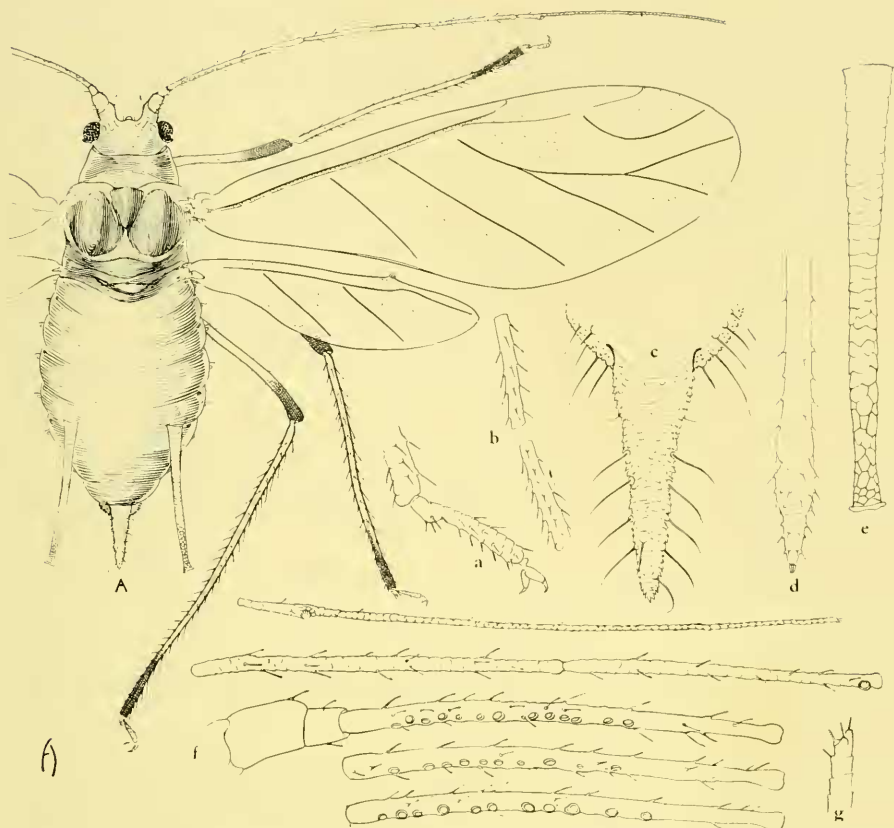


Figure 49. Potato aphid, *Macrosiphum solanifolii* (Ashmead). A, alate parthenogenetic female; a, hind tarsus; b, upper and lower portions of the hind tibia; c, cauda; d, rostrum—ventral aspect; e, cornicle; f, antenna with two additional segments of segment III from other individuals to show variation; g, tip of antenna.

be well represented in South America. The extensive collections help to substantiate this belief.

CHILE:

On squash, *Cucurbita maxima*, Antofagasta, November 21, 1950—abundant; apterae and alate.

On *Sonchus* sp., Zapallar, Province of Aconcagua, November 27, 1950—1 alate.

On *Cereus* cactus, Las Palmas, Province of Aconcagua, November 29, 1950—apterous.

On beans, *Phaseolus* sp., San Carlos, Province of Nuble, December 23, 1950—1 alate.

- On artichoke, *Cynara scolymus*, San Carlos, Province of Nuble, December 23, 1950—2 alatae.
- On anise, or dill, *Anethum graveolens*, Angol, Province of Bio-Bio, January 1, 1951—1 alate.
- On morning glory, *Convolvulus* sp., Angol, January 1, 1951—many apterae and alatae.
- On cultivated tomato (tomatera), *Lycopersicon esculentum*, Angol, January 2, 1951—1 alate.
- On squash, *Cucurbita maxima*, Agricultural School, Angol, January 4, 1951—many apterae and alatae.
- On cultivated potato (patata, papa), *Solanum tuberosum*, Angol, January 5, 1951—1 alate and 5 apterae.
- On garden pea, *Lathyrus sativus* L., by sweeping, Lautaro, Province of Cautin, January 6, 1951—1 aptera and 1 alatae.
- Sweeping at Los Muermos, Province of Llanquihue, January 20, 1951 1 alate.
- On wild potato, Puyehue, Province of Osorno, January 26, 1951—1 apterous and 4 alatae.

ARGENTINA:

Blanchard (1922, pp. 190–2, fig. 3; 1939, pp. 969–70; 1944, p. 43) lists the species on many host plants, including:

Antirrhinum sp., (cardos), *Carduus* sp., *Citrus* sp., *Cosmos* sp., *Cristaria corchorifolia* Gris., *Cucurbita* spp., *Ipomœa batatas* (L.), *Lactuca* sp., *Malva* sp., *Pyrus communis* L., *P. malus* L., *Prunus avium* L., *Solanum lycopersicum* L., *S. tuberosum* L., *Spinacia oleracea* L., *Vicia faba* L., and *Watsonia* sp.

The writer has recently received specimens from L. A. Bahamondes, collected by him

On *Tulipa* sp. at Mendoza, October 13, 1950—1 aptera and 1 alate.

COLOMBIA:

On *Lantana* sp., at the port of Buenaventura, November 3, 1950—many specimens of apterae and alatae.

PERU:

On bean, *Phaseolus vulgaris* L., at Callao, November 14, 1950—1 alate and many apterae.

On marigold, *Calendula officinalis*, Callao, November 14, 1950—1 alate and many apterae.

On marigold, *Calendula officinalis*, Callao, November 14, 1950—1 alate and a number of apterae.

- On pomegranate, *Punica granatum* L., Callao, November 14, 1950—10 apterae.
- On marguerite, *Chrysanthemum frutescens*, Callao, November 14, 1950—many apterae.
- On *Datura* sp., Botanical Garden, Lima, November 14, 1950—2 alatae and 10 apterae.
- On mallow, *Malva* sp., Callao, November 14, 1950—1 alate and many apterae.
- On tobacco, *Nicotiana* sp., Botanical Garden, Lima, November 14, 1950—5 alates.
- On *Solanum* sp., Callao, November 14, 1950—2 alates and many apterae.
- On potato, *Solanum tuberosum*, Callao, November 16, 1950—5 alatae and 8 apterae.
- On cotton, *Gossypium* sp., Chanca, Province of Lima, March 15, 1951—1 apterous.
- On *Asclepias* sp., and on thorny shrub (Leguminosae) at Chielayo, Province of Lima, March 19, 1951—all apterae.

Macrosiphum tucumani Essig, new species

Tucuman Aphid

(Figure 50)

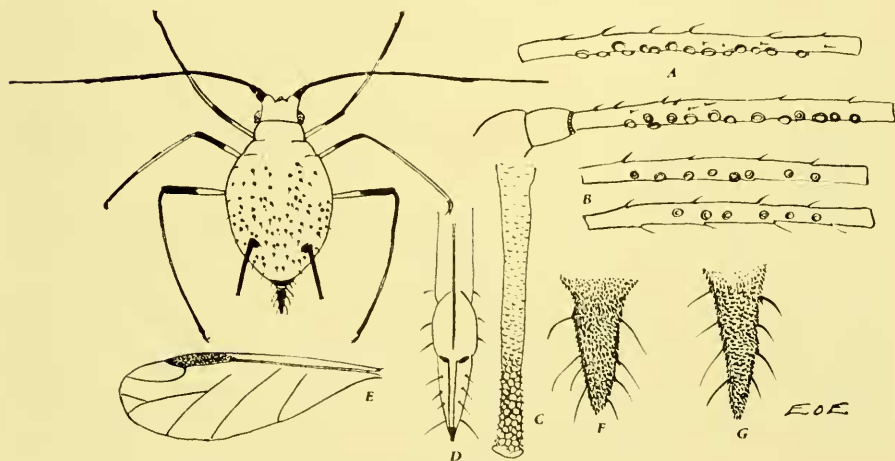


Figure 50. Tucuman aphid, *Macrosiphum tucumani* Essig, new species. Apterous parthenogenetic female showing general color pattern; A, two antennal segment III of the alate; B, same for the aptera; C, cornicle of alate; D, rostrum of alate; E, wing; F, cauda of alate; G, cauda of aptera.

TYPE: *Alate parthenogenetic female*: The color is apparently nearly black in the living forms and retains much of the same when cleared and mounted. A relatively small species averaging 2 mm. in length. The body spines or hairs are short and mostly knobbed or enlarged apically. The antennae are black; long and slender; longer than the body; 2:20 mm. The unguis or filament is about six times the length of the base. Segment III has the following distribution of secondary circular sensoria arranged nearly in a row: 14-14. (In paratypes the following variation was noted: 13-15, 15-16 on the other six alates collected.) The rostrum is of even width to the pointed apical segment and extends to or just beyond the third coxae. The legs are mostly black, slender, and the tibiae curved as shown. The wings are as drawn and are 2.70 mm. in length. The second branch of the media is two-thirds beyond the base. The cornicles are nearly cylindrical, black or somewhat paler basally with the apical one-fourth reticulated; length 0.47 mm. The base and apex are somewhat wider than the rest. The cauda is not quite half of the length of the cornicles or 0.22 mm. and has 8 or 9 spine-like hairs.

Apterous parthenogenetic female: Dark, body is covered with very many small blackish areas around the bases of the short knobbed spines as is a characteristic of such species as *Macrosiphon ambrosiae* (Thomas), *Dactynotus jaceae* Linnaeus, *D. picridis* (Fabricius), *D. tararaci* (Kaltenbach), and others. Antennal segment III has circular secondary sensoria loosely distributed almost the full length in the following combinations: 7-8, 7-12, 9-9, 9-10, 11-13, 12-12. The cornicles are somewhat longer than in the alate, being 0.50 mm. Length, 2 mm.

Host plant and locality: On *Baccharis* sp. at **Huanta** (Guanta) on the Rio Turbia which flows into the Rio Elqui, **Province of Coquimbo, Chile**, December 4, 1950, by Dr. A. E. Michelbacher; and on *Baccharis* sp. (?), on a ridge at 4,000 feet altitude, 24 kilometers west of **Tucuman, Argentina**, February 11, 1951, by Dr. Michelbacher. The collections consisted of 43 adult and a number of immature apterous forms, and 7 alates. One of these, mounted on a slide with a number of alates and immature forms has been designated as the type. All others are labeled paratypes.

This species is unusual in having a relatively short cauda and somewhat blunter rostrum. The cornicles somewhat resemble those of *M. solanifolii* (Ashmead) in the arrangement and amount of reticulation, but number and distribution of sensoria are quite different, especially the greater number on III of the apterae as figured.

Tribe **Dactynotini**Subtribe **Dactynotina****Amphorophora peruviana** Essig, new species

Peruvian Aphid

(Figure 51)

TYPE: *Alate parthenogenetic female*: A pale and dark species with dusky-bordered wing veins. The body, excepting the abdomen, is mostly dark; the abdomen has a few regular dark patches similar to those shown in the drawing of the apterous form. The antennae are slender, longer than the body—the unguis is about six times the length of the base. Circular secondary sensoria of various sizes occur nearly in a row on the underside of segment III. The number may vary from 14 to 15. (In paratypes there is a variation in the number of 14–19.) The rostrum is relatively short and extends only to the third coxae; with many short spines as illustrated. The forewings are as drawn. The legs are slender. The cornicles are about twice as long as the cauda and are smooth, distinctly swollen, with two or three rings or broken reticulations at the apex, the flange is irregularly flaring, 0.55 mm. long. The cauda is triangular, being more pointed in the alate than in the apterae; 0.30 mm. long and 0.14 mm. to 0.17 mm. wide at the base and with the normal number of hairs. Length of body 3.50 mm.; length of forewing 3.50 mm.

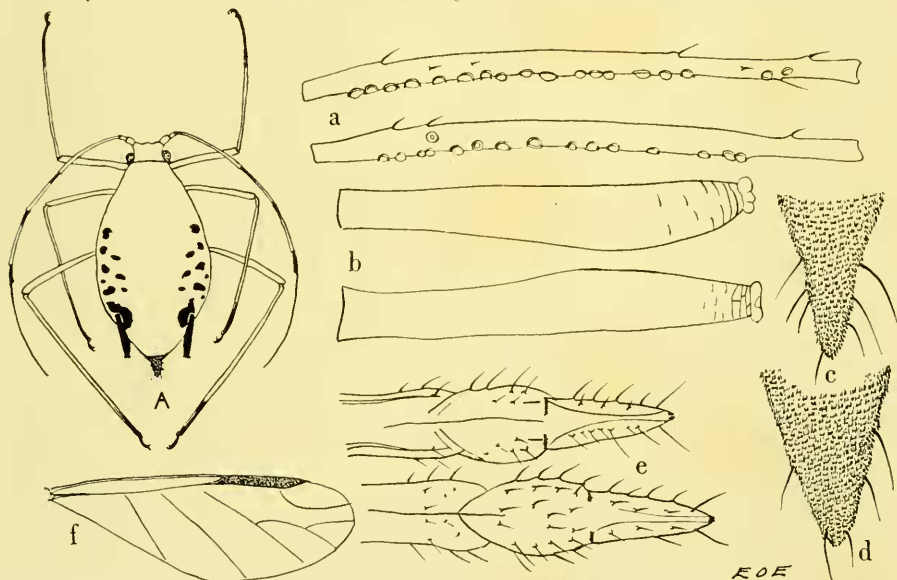


Figure 51. Peruvian aphid, *Amphorophora peruviana* Essig, new species. A, aptera showing color pattern; a, antennal segment III of alate above and aptera below; b, cornicles; c, cauda of alate; d, cauda of aptera; e, rostrum upper and lower surfaces; f, wing.

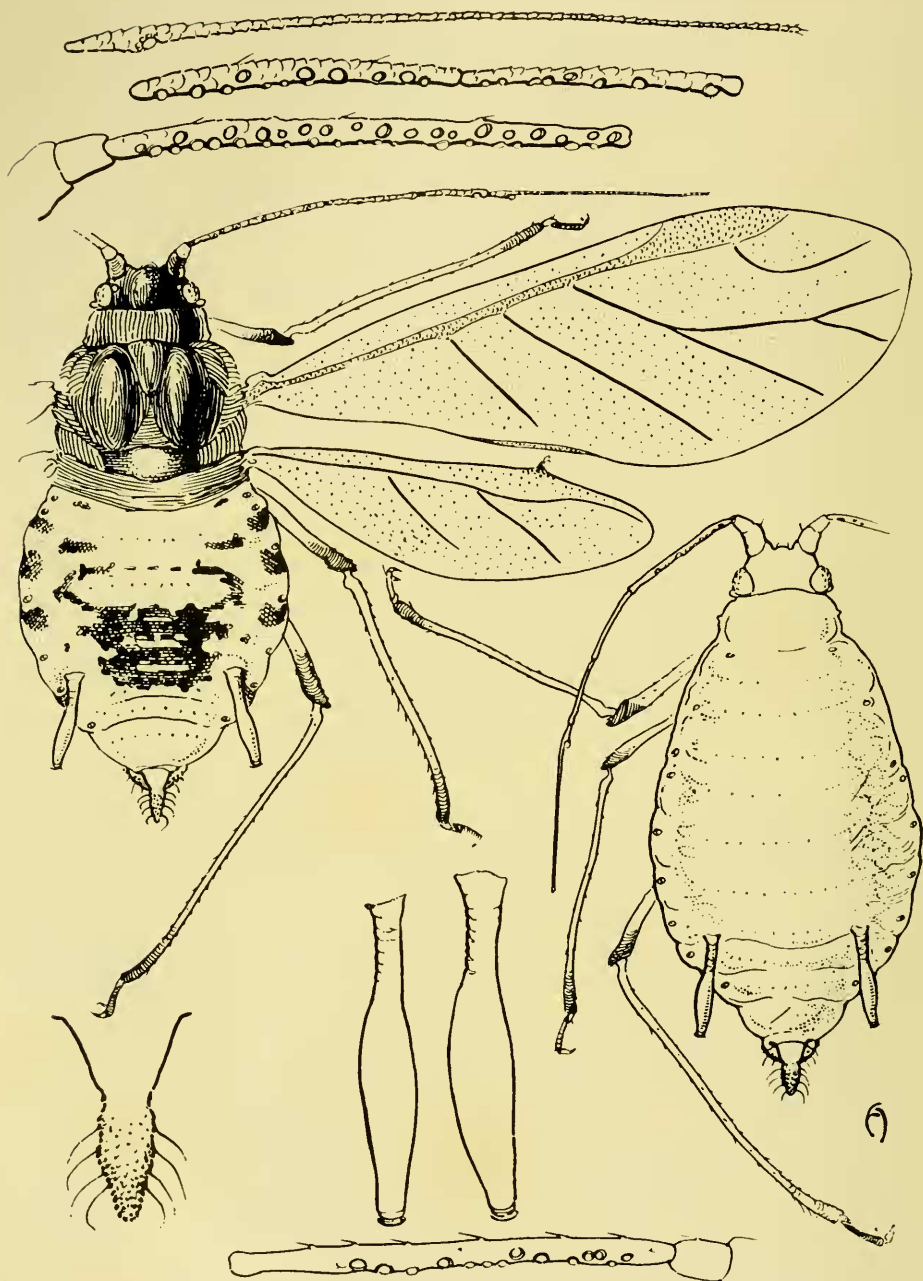


Figure 52. Sow-thistle aphid, *Amphorophora sonchi* (Oestlund). Alate and apterous forms with enlargements of antenna of alate, and antennal segment III of the apterous; cornicles of both, and cauda of alate. (After Zimmerman, 1948.)

Apterous parthenogenetic female: Normal in size and form, 3 mm. in length. The general characteristics similar to those of the alate. Antennae without secondary sensoria. Cauda broader than in the alate, with few spines.

The type specimen was chosen from three alates (one designated as the type) and five mature apterae and one immature specimen. All mounted on four aluminum slides.

The type is mounted singly on a slide. The remaining alatae and all apterae are designated as paratypes.

Host: Unknown; specimens were obtained by beating onto a canvas sheet.

Locality: **Rio Pampas, Peru**, March 8, 1951.

Collector: Dr. A. E. Michelbacher.

This species somewhat resembles *A. sonchi* (Oestlund) but differs markedly in having much shorter and more triangular cauda; thickened cornicular openings; hairy rostrum; and dark body markings.

***Amphorophora sonchi* (Oestlund)**

Sow-thistle Aphid

(Figure 52)

Rhopalosiphum sonchi OESTLUND, 1886; *Amphorophora cosmopolitana* MASON, 1925.

This is a large green and black species which, in colder areas of its range, overwinters on *Ribes* spp., and passes the summer on *Sonchus* spp., and other related hosts. In the warmer areas it may pass both winter and summer on the latter.

CHILE:

On *Sonchus* sp., Zapallar, Province of Aconcagua, November 27, 1950
—many apterae.

On *Sonchus* sp., Rio Bueno, Province of Valdivia, January 14, 1951
—a number of apterae.

ARGENTINA:

On *Sonchus* sp., in Province of Buenos Aires. Listed as *Amphorophora lactucae* (Kaltenbach) Blanchard (1922, pp. 207-9, fig. 11).

On *Lactuca* spp., *Sonchus* spp., and *Cichorium endivia* in Province of Buenos Aires. Listed as *Amphorophora cosmopolitanus* Mason (Blanchard, 1939, pp. 951-53).



Figure 53. Woolly apple aphid, *Eriosoma lanigera* (Hausmann), as it appears on apple.

Family **ERIOSOMATIDAE**Subfamily **ERIOSOMATINAE**Tribe **Eriosomatini****Eriosoma lanigera** (Hausmann)

Woolly Apple Aphid

(Figures 53-54)

Aphis lanigera HAUSMANN, 1802; *Coccus mali* BINGLEY, 1803; *Myzoxylus mali* BLOT, 1831; *Eriosoma mali* SAMOUELLE, 1819; *Schiozoneura lanigera* HAUSMANN, 1841.

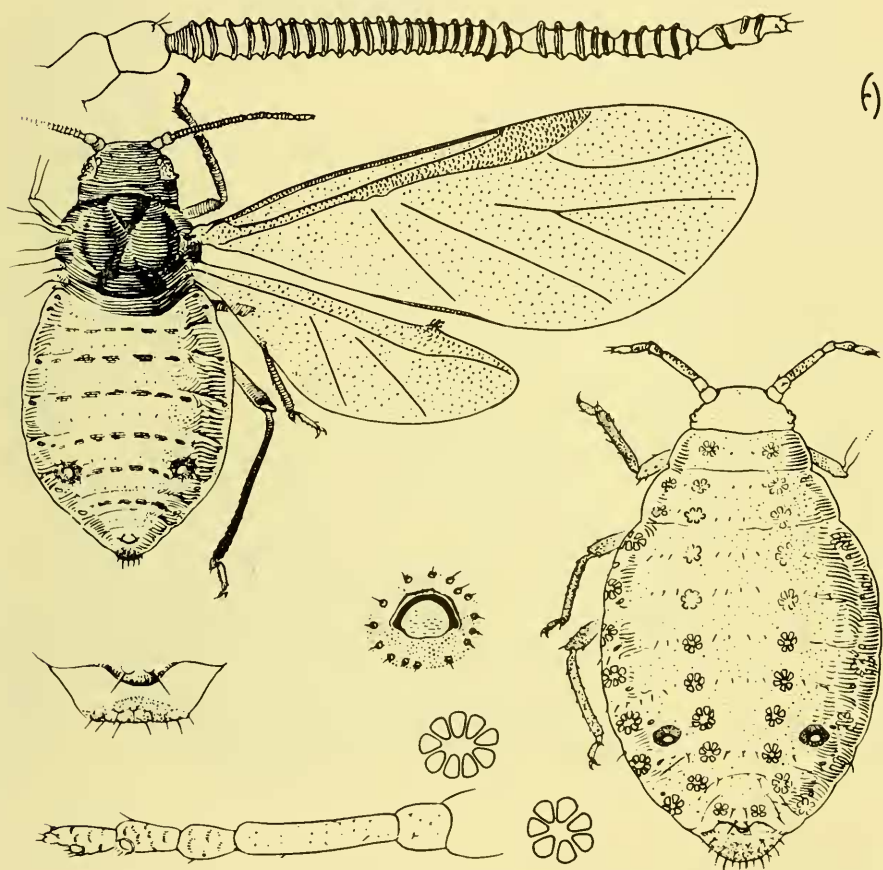


Figure 54. Woolly apple aphid, *Eriosoma lanigera* (Hausmann). Alate and apterous parthenogenetic females x 66; antennae of alate and aptera; cauda and anal plate and cornicle of alate; wax glands of aptera x 166. (After Zimmerman, 1948.)

This is a Holarctic species now common throughout temperate Europe and North America. It has been widely distributed through commerce to all temperate regions where its hosts flourish.

CHILE:

On cultivated apple (manzano), Anglo, Province of Bio-Bio, January 1, 1951; only apterae were taken. The material showed about 20 per cent parasitism by *Aphelinus mali* (Haldeman) which was introduced into Chile many years ago.

ARGENTINA:

According to Blanchard (1926, pp. 333-35; 1939, pp. 983-84), the woolly apple aphid is common on apple wherever grown. He also states that the "introduction of *Aphelinus mali* Haldeman has done much to keep it in control."

Subfamily **PEMPHIGINAE**

Tribe **Pemphigini**

Pemphigus populi-transversus Riley

Transverse Poplar Gall Aphid

(Figure 55)

PERU:

What is believed to be this species was collected by Dr. A. E. Michelbacher on the roots of plants exposed by turning stones in the bed of the Red River, Callao, November 16, 1950. The lot consisted of 7 apterae and 15 alates.

ARGENTINA:

Blanchard (1926, pp. 335-337; 1939, pp. 986-87) records this species as forming subglobular galls on the leaf petioles of *Populus canadensis* which may have been introduced into the Province of Buenos Aires. Also on *Populus angulata* Ait.

Thecabius populi-monilis (Riley)

Bead-like Cottonwood Gall Aphid

(Figure 56)

Pemphigus populi-monilis RILEY, 1879; *Thecabius populimonilis* (Riley) GILLETTE, 1913.

CHILE:

This aphid makes elongated marginal galls in rows along the veins of



Figure 55. Galls of the transverse poplar gall aphid, *Pemphigus populi-transversus* Riley, on the petioles and leaf bases of *Populus* sp.

the leaves of *Populus* spp. A single alate specimen was taken at Zapallar, Province of Aconcagua, November 27, 1950.

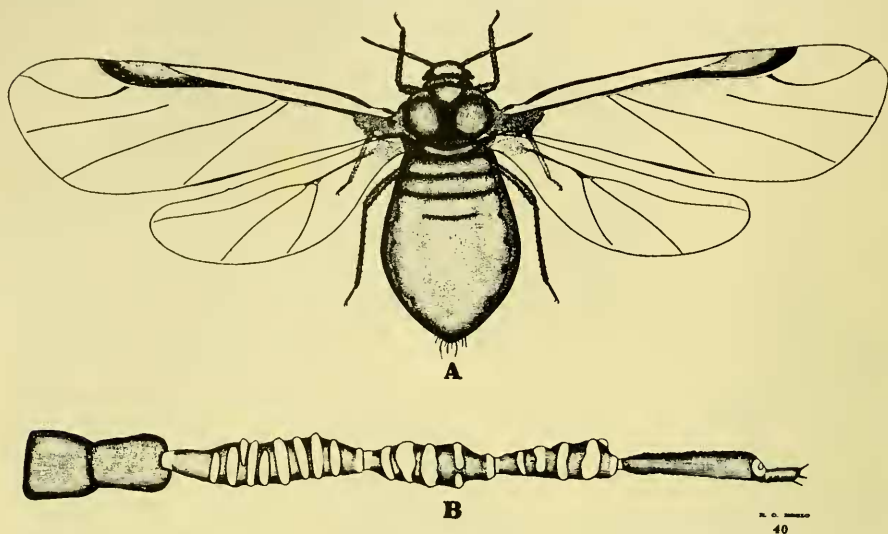


Figure 56. Bead-like cottonwood gall aphid, *Thecabius populi-monilis* (Riley). A, alate; B, antenna of alate enlarged.

INDICE DE LAS PLANTAS HUESPEDES

HOST-PLANT INDEX

- Abeto. Véase *Abies* sp.
Abies sp.
Cinara grossus (Kalt.), Argentina.
Cinara hyalina (Koch), Argentina.
Dreyfusia nordmanniana Ecks.
 Argentina.
 Abrojo. Véase *Xanthium* sp.
Abutilon sp.
Myzus persicae (Sulzer), Argentina.
Acacia sp.
Aphis fabae Scopoli, Argentina.
medicaginis Koch. Argentina.
Acacia mansa. Véase *Sesbania punicea*
 (D. C.).
 Achicoria. Véase *Chicorium intybus* L.
Acrostichum sp. Helecho.
Idopterus nephrolepidis Davis.
 Argentina.
 Adelfa. Véase *Nerium* spp.
Adesmia sp.
Aphis laburni Kalt.
Adiantum sp. Helecho.
Idopterus nephrolepidis Davis.
 Argentina.
Agave sp. (Maguey, cabuya).
Aphis rumicis L. Peru.
 Agracielo. Véase *Berberis* sp.
 Aguacate Véase *Persea americana* Mill.
 Ají. Véase *Capsicum* spp.
 Alamo. Véase *Populus* spp.
 Albaricoque. Véase *Prunus armeniaca*
 L.
 Alcaucil. Véase *Cynara scolymus* L.
 Alfalfa. Véase *Medicago sativa* L.
 Algodonero. Véase *Gossypium* spp.
 Alhelí. Véase *Mathiola incana*.
 Almendro. Véase *Prunus domestica* L.
 (*P. communis* Huds.)
 Altamisa. Véase *Descurainia appendi-*
culata (Gris.).
Alstromeria sp.
Aphis alstromeria, n. sp. Chile.
Amaryllis belladonna L.
Aphis gossypii (Glover).
Andropogon bicornis L.
Hysteroneura ogloblini Blanchard.
 Argentina.
Anethum graveolens L.
Cavariella aegopodii (Scopoli).
 Argentina.
Macrosiphum solanifolii (Ashm.).
 Chile.
 Anís. Véase *Pimpinella anisum* L.
Antirrhinum majus L.
Macrosiphum solanifolii (Ashm.).
 Argentina.
Myzus persicae (Sulzer), Argentina.
 Apio. Véase *Apium graveolens* L.
Apium graviolens L.
Cavariella aegopodii (Scop.).
 Argentina.
Trifidaphis phaseoli (Pass.).
 Argentina.
Arachis hypogaea L. (cacahue,
 cacahuate).
Aphis laburni Kalt. Argentina.
Aphis medicaginis Koch. Argentina.
Araujia sericofera Bert.
Aphis nerii B. d. Fonsc.
 Argentina.
 Arrayán. Véase *Orthostemon sellowii*
 Berg.
 Arroz. Véase *Oryza sativa* L.
Artemisia spp.
Macrosiphum ambrosiae (Thomas).
 Argentina, Chile.
Aphis medicaginis Koch. Chile.
Arum sp.
Pentalonia nigronervosa Coquer.
 Argentina, Brazil.
Asclepias sp.
Aphis gossypii Glover. Argentina,
 Peru.
Aphis nerii B. d. Fonsc. Bolivia, Peru.
Macrosiphum solanifolii (Ashm.).
 Peru.
Asclepias curassavica L.
Aphis nerii B. d. Fonsc. Argentina.
Asparagus officinalis L.
Myzus persicae (Sulzer), Argentina.
Aster spp.
Brachycaudus helichrysi (Kalt.).
 Argentina.
Macrosiphum lizerianum Blanchard.
 Argentina.

- Astralago*. Véase *Astragalus*
Astragalus sp. (astragalo).
Aphis medicaginis Koch. Argentina, Peru.
Atriplex sp.
Aphis gossypii Glover. Colombia.
 Avellano. Véase *Corylus avellana* L.
 Avena. Véase *Avena sativa* L.
Avena sativa L.
Rhopalosiphum maidis (Fitch). Argentina.
Toxoptera graminum (Rondani). Argentina.
 Azucena. Véase *Amaryllis belladonna* L. and *Lilium* spp.
Baccharis spp.
Brachycaudus helichrysi (Kalt.). Argentina.
Macrosiphum ambrosiae (Thomas). Chile.
chilensis, n. sp. Chile.
cordobensis Blanchard. Argentina.
huantana n. sp. Chile.
lizerianum Blanchard. Argentina.
macolai Blanchard. Argentina.
tucumani n. sp. Argentina, Chile.
Aphis gossypii Glover. Colombia.
medicaginis Koch. Chile.
Baccharis melastomaeifolia Gris.
Brachycaudus helichrysi (Kalt.). (Bl.). Argentina.
Aphis gossypii Glover. Argentina.
Macrosiphum littoralis Blanchard. Argentina.
Baccharis salicifolia Pers.
Macrosiphum macolai Blanchard. Argentina.
 Baladre. Véase *Nerium* spp.
Barnadesia odorata Griseb.
Myzus persicae (Sulzer). Argentina.
 Batata. Véase *Ipomoea batatas* (L.).
Begonia sp.
Aphis gossypii Glover. Argentina.
Aulacorthum pseudorosaefolium Blanchard. Argentina.
Myzus ornatus Laing. General distribution.
persicae (Sulzer). Argentina.
Bellis perrenis L.
Myzus persicae (Sulzer). Argentina.
- Berberis* sp. (Berbero, agracejo).
Aphis illinoisensis Shimer. Chile.
Berberis burifolia Lam.
Aphis patagonica Blanchard. Argentina.
 Berbero. Véase *Berberis* sp.
Beta vulgaris L.
Myzus persicae (Sulzer). Argentina.
Bidens megapota Spreng.
Aphis coreopsidis (Thomas). Argentina.
Bignonia sp.
Aphis gossypii Glover. Chile.
Myzus ornatus Laing. Chile.
Bahmeria nivea Gaud.
Myzus persicae (Sulzer).
 Bonetero. Véase *Euonymus* sp.
Brassica nigra L. (Mostaza negro.)
Brevicoryne brassicae (L.). Argentina, Brazil, Chile, Peru.
Rhopalosiphum pseudobrassicae (Davis). Argentina.
Brassica oleracea L. Coliflor.
Brevicoryne brassicae (L.). Argentina, Brazil, Chile, Peru, Trinidad Island.
Myzus persicae (Sulzer). Argentina.
Brassica rapa L.
Brevicoryne brassicae (L.). Argentina, Chile, Brazil, Peru.
Myzus persicae (Sulzer). Argentina.
Rhopalosiphum pseudobrassicae (Davis). Argentina.
Brassica sinapistrum Boisd.
Brevicoryne brassicae (L.). Argentina.
Bromus sp.
Rhopalosiphum prunifoliae (Fitch). Argentina.
Bromus unioloides Kth.
Rhopalosiphum psundoavenae (Patch). Argentina.
 Cabay. Véase *Agave*.
 Cacahuete. Véase *Arachis hypogaea* L.
 Cacahue. Véase *Arachis hypogaea* L.
 Cacao. Véase *Theobroma* sp.
 Cacto. Véase
Cactus spp.
Epiphyllum sp.
 Cafe. Véase *Coffea* sp.
 Calabaza. Véase *Cucurbita* spp.

- Calendula officinalis* L.
Brachycaudus helichrysi (Kalt.).
 Peru.
Macrosiphum solanifolii (Ashm.).
 Peru.
Camelia. Véase *Camellia* sp.
Camellia spp.
Aphis camelicola Del G. Argentina.
Macrosiphum rosae (Linn.).
Toxoptera aurantii (B. d. Fonsc.).
 Cosmopolitan.
 Caña de azúcar. Véase *Saccharum officinarum* L.
 Cañamo. Véase *Cannabis sativa* L.
Canna sp.
Rhopalosiphum nymphaeae Linn.
 Peru.
Cannabis sativa L. (canamo).
Myzus persicae (Sulzer). Argentina.
Capsicum spp. (Ají).
Myzus persicae (Sulzer). Argentina.
Capparis spinosa L.
Brevicoryne brassicae (Linn.). Peru.
Myzus persicae (Sulzer). Peru.
 Cardencha. Véase *Dipsacus fullonum* L.
 Cardoncillo. Véase *Eryngium paniculatum* Cav.
 Cardo negro. Véase *Cirsium lanceolatum* (L.).
 Cardos. Véase *Carduus* sp.
Carduus spp.
Macrosiphum solanifolii (Ashmead).
 Argentina.
Carex spp.
Rhopalosiphum maidis (Fitch).
Carum sp.
Hydaphis conii (Davidson). Chile.
Carum carvi L. (Carvi).
Cavariella aegopodii (Scopoli).
 Argentina.
 Carvi. Véase *Carum carvi* L.
 Cassia sp.
Aphis medicaginis Koch. Chile. Peru.
Cassia aphylla Cav.
Aphis gossypii Glover. Argentina.
medicaginis Koch. Chile. Peru.
Cassia bacillaris. (Taro).
Aphis gossypii (Glover). Trinidad
 Island.
Castanea sativa Mill. (castaño).
Myzocallis castanicola Baker.
 Argentina.
- Castaña*. Véase *Castanea* spp.
Casuarina sp.
Aphis gossypii Glover. Peru.
 Cebada. Véase *Hordeum vulgare* L.
 Cebadilla. Véase *Bromus unioloides*
 Kth.
 Centeno. Véase *Secale cereale* L. (Rye).
Cereus sp. (Genero de cactus).
Macrosiphum solanifolii (Ashmead).
 Chile.
Myzus persicae (Sulzer). Chile.
ornatus Laing. Chile.
Aphis medicaginis Koch. Chile.
 Cerraja. Véase *Sonchus oleraceus* L.
Cestrum parqui L'Herit. (Duraznillo
 negro).
Aphis rumicis L. Argentina.
Chaenomeles japonica (Thunb). Lindl.
 (Membrillo japonés).
Aphis rumicis L. Argentina.
 Chaguar de las penas. Véase *Dyckia
 floribunda* Gris.
 Chayote. Véase *Sechium edule* Sw.
Chenopodium sp.
Aphis gossypii Glover. Argentina.
Myzus persicae (Sulzer). Argentina.
 Chilca. Véase *Erigeron* spp., *Baccharis*
 spp.
Chrysanthemum sp. (Crisantemo).
Aphis rumicis L. Chile.
medicaginis Koch. Argentina.
Brachycaudus helichrysi (Kalt.).
 Peru.
Capitophoraphis williamsoni
 Blanchard, Argentina.
Macrosiphum artemisiae (Thomas).
 Peru.
Chrysanthemum frutescens L.
Macrosiphum solanifolii (Ashmead).
 Peru.
Chrysanthemum indicum L.
 (Crisantemo).
Aphis fabae Scopoli. Argentina.
Brachycaudus helichrysi (Kalt.).
 Argentina.
Macrosiphoniella sanborni
 (Gillette), Argentina.
Chrysanthemum maximum Ramond.
Brachycaudus helichrysi (Kalt.).
 Peru.

- Cicer arietinum* L.
Rhopalosiphum pseudoavenae (Patch). Argentina.
- Vichorium endivia* L. (Escarola).
Amphorophora sonchi (Oestlund).
 (A. cosmopolitanus Mason.)
 Argentina.
- Macrosiphum sonchi** (L.).
 Argentina.
- Vichorium intybus* L. (Achicoria).
Macrosiphum sonchi L. Argentina.
- Ciclamen. Véase *Cyclamen indicum* L.
- Cicuta* sp.
Aphis medicaginis Koch. Argentina.
- Cicuta. Véase *Conium maculatum* L.
- Cineraria* sp.
Brachycandus helichrysi (Kalt.).
 Argentina.
- Myzus persicae** (Sulzer). Argentina.
- Ciprés. Véase *Cupressus* sp.
- Cirsium lanceolatum* (L.).
 (cardo negro).
- Aphis fabae** Scopoli. Argentina.
 rumicis L. Chile.
 medicaginis Koch. Argentina.
- Ciruelo. Véase *Prunus domestica* L.
- Citrullus vulgaris* Schrad.
- Aphis gossypii** Glover. Argentina.
- Citrus* spp.
Aphis citricidus (Kirkaldy).
 Argentina, Chile, Peru.
 gossypii Glover. Argentina.
 laburni Kalt. Argentina.
- Macrosiphum solanifolii** (Ashmead).
 Argentina.
- Myzus circumflexus** (Buckton).
 Argentina.
- Paratoxoptera argentinensis** (Blanchard). Argentina.
- Toxoptera aurantii** (B. d. Fonsc.).
 Argentina, Brazil, Trinidad
 Island.
- Clavel. Véase *Dianthus caryophyllus* L.
- Clematide. Véase *Clematis* sp.
- Clematis* sp. (clematide).
Aphis nerii (B. d. Fonsc.).
 Argentina.
- Coccoloba* sp.
Toxoptera aurantii (B. d. Fonsc.).
 Tropics.
- Coffea* (café).
Toxoptera aurantii (B. d. Fonsc.).
 Tropics.
- Coliflor. Véase *Brassica oleracea* L.
- Colocasia esculenta* (L.). (Taro.)
Aphis gossypii Glover. Trinidad
 Island.
- Comida de víbora. Véase *Lycium argentinum* Hier.
- Comino. Véase *Cuminum cyminum* L.
 Argentina.
- Compositae* (various genera and species)
Aphis coreopsidis Thomas. Colombia.
 gossypii Glover. Colombia.
 medicaginis Koch. Argentina.
 rumicis Linn. Peru.
- Macrosiphum beretica** Blanchard.
 Argentina.
 bonariensis Blanchard. Chile.
 griersoni Blanchard. Chile.
 lizerianum Blanchard. Argentina.
 muermosa, n. sp. Chile.
 nuble, n. sp. Chile.
- Conejitos. Véase *Antirrhinum majus* L.
- Conium maculatum* L.
Aphis fabae Scopoli. Argentina.
- Convolvulus* sp. (Domperdo, Dondiego de día).
Macrosiphum solanifolii (Ashmead).
 Chile.
- Myzus persicae** (Sulzer). Chile.
- Coqueta. Véase *Bellis perennis* L.
- Corona de novia. Véase *Spiraea chamaedrifolia* L.
- Corylus avellana* L. (Avellano).
Myzocallis coryli (Gæze).
- Cosmos* sp.
Aphis medicaginis Koch. Argentina.
Macrosiphum solanifolii (Ashmead).
 Argentina.
- Myzus persicae** (Sulzer). Argentina.
- Cosmos bipennatus* Cav.
Aphis fabae Scopoli. Argentina.
- Macrosiphum lizerianum** Blanchard.
 Argentina.
 solanifolii (Ashmead).
 Argentina.
- Myzus persicae** (Sulzer). Argentina.
- Crataegus* sp. (Espino).
Aphis gossypii Glover. Argentina.

- Crisantemo*. Véase *Chrysanthemum indicum* L.
- Cristaria corchorifolia* Gris.
Macrosiphum solanifolii (Ashmead).
 Argentina.
- Cucumis melo* L.
Aphis gossypii Glover. Argentina.
- Cucumis sativus* L. (Cohombro o pepino).
Aphis gossypii Glover. Trinidad Island.
- Cucurbita maxima* L. (Calabaza).
Aphis gossypii Glover. Brazil, Chile, Peru, Trinidad Island.
Macrosiphum solanifolii (Ashmead).
 Argentina, Chile.
- Cuminum cyminum* L. (Comino).
Myzus persicae (Sulzer). Argentina.
- Cupressus macrocarpa* Hartw.
 (Cipres).
Cinara fresai Blanchard. Argentina.
- Cyclamen indicum* L. (Ciclamen).
Myzus circumflexus (Buckton).
 Argentina.
- Cycloma* spp.
Aphis gossypii Glover. Argentina.
- Cydonia japonica* Pers. (Membrillo japonés).
Aphis fabae Scopoli. Argentina.
gossypii Glover. Argentina.
- Cydonia vulgaris* Pers. (Membrillo).
Aphis gossypii Glover. Argentina.
- Cynara scolymus* L. (Alcaucil).
Capitophorus braggi (Gillette).
 Argentina, Chile.
Macrosiphum griersoni Blanchard.
 Argentina.
solanifolii (Ashmead). Chile.
Myzus persicae (Sulzer).
 Argentina.
- Cynodon dactylon* (L.).
Paraprociophilus graminis Blanchard.
 Argentina.
- Dahlia* sp.
Aphis medicaginis Koch. Argentina.
- Dahlia variabilis* Desf. (Dalia).
Aphis fabae Scopoli. Argentina.
- Dalia*. Véase *Dahlia variabilis* Desf.
- Damasco*. Véase *Prunus armeniaca* L.
- Datura* sp.
Macrosiphum solanifolii (Ashmead).
 Peru.
Myzus persicae (Sulzer). Chile, Peru.
- Daucus carota* L. (Zanahoria).
Caviarella aegopodii (Scopoli).
 Argentina.
- Descraineria appendiculata* (Gris.).
Myzus persicae (Sulzer). Argentina.
- Dianthus caryophyllus* L. (Clavel).
Myzus persicae (Sulzer). Argentina.
Trifidaphis phaseoli (Passerini).
 Argentina.
- Diente de león*. Véase *Taraxacum vulgare* (Lam.).
- Dipsacus fullonum* L. (Cardencha).
Macrosiphum rosae (Linn.).
 Cosmopolitan.
- Dipsacus sylvestris* Huds.
Macrosiphum rosae (Linn.)
 Cosmopolitan.
- Domperdo*. Véase *Convolvulus* spp.
- Dondiego de día*. Véase *Convolvulus* spp.
- Duraznillo negro*. Véase *Cestrum parqui* L'Herit.
- Duraznero*. Véase *Prunus persica* L.
- Dyckia floribunda* Gris. (Chaguar).
Aphis fabae Scopoli. Argentina.
gossypii Glover. Argentina.
medicaginis Koch. Argentina.
- Echinodorus* sp.
Rhopalosiphum nymphaeae (L.).
 Brazil.
- Encelia* sp.
Macrosiphum ambrosiae (Thomas).
 Peru.
- Epiphyllum* sp.
Aphis rumicis L. Chile.
- Eragrostis pilosa* (L.).
Carolinaia ogloblini (Blanchard).
(Hysteroneura). Argentina.
- Erigeron* sp.
Macrosiphum cordobensis
 Blanchard. Argentina.
macolai Blanchard. Argentina.
- Eriobotrya japonica* Lindl.
Macrosiphum rosae (L.). Argentina.

Eryngium sp.

Aphis eryngii Blanchard. Argentina.
medicaginis Koch. Argentina.

Eryngium paniculatum Cav.

Aphis fabae Scopoli. Argentina.

Escarola. Véase *Cichorium endivia* L.Espadana. Véase *Typha* sp.Esparrago. Véase *Asparagus officinalis* L.Espinaca. Véase *Spinacia oleracea* L.Espino. Véase *Crataegus* sp.Eucalipto. Véase *Eucalyptus globulus* Lab.*Eucalyptus globulus* Lab. (Eucalipto).

Aphis fabae Scopoli. Argentina.
medicaginis Koch. Argentina.

Eugenia sp. (Arrayau).

Aphis rumicis L. Argentina.
gossypii var. *malvoides* Van der Goot. Argentina.

Euonymus sp.

Aphis bazzii Elanchar. Argentina.

Euonymus europaea L.

Aphis fabae Scopoli. Argentina.

Euonymus japonica Thunb.

Aphis fabae Scopoli. Argentina.
medicaginis Koch. Argentina.

Euphorbia portulacoides Speng.

Aphis pseudopulchella Blanchard. Argentina.

Feijoa sp. (Feijao).

Smynthuroides betae Westwood.
 [Trifidaphis phaseoli (Pass.)].
 Brazil.

Ficus sp. (Higuero).

Toxoptera aurantii (B. d. Fonsc.).
 Cosmopolitan.

Flox. Véase *Phlox*.*Foeniculum vulgare* Gaertn. (Hinojo).

Aphis fabae Scopoli (?).
 Argentina.

medicaginis Koch. Argentina.

Cavariella aegopodii (Scopoli).
 Argentina.

Sappaphis apiifolia (Theobald).
 Argentina.

Fragaria vesca L. Frutilla.

Capitophorus fragrefolii (Ckll.).
 Argentina.

Frijol. Véase *Phaseolus*.Frutilla. Véase *Fragaria vesca* L.*Fuchsia* spp.

Myzus ornatus Laing. Peru, Chile
 (?).

Fucsia. Véase *Fuchsia*.Garbanzo. Véase *Cicer arietinum* L.*Gardenia florida* L. (Jazmin).

Aphis gossypii Glover. Argentina.

Toxoptera aurantii (B. d. Fonsc.).
 Cosmopolitan.

Genero de cactus. Véase *Cereus* sp.Geranio. Véase *Pelargonium* spp.*Gerbera jamesoni* Balus.

Aphis fabae Scopoli. Argentina.

medicaginis Koch. Argentina.

Macrosiphum ambrosiae (Thomas).
 Peru.

Gladiolo. Véase *Gladiolus communis* L.*Gladiolus communis* L. (Gladiolo).

Aphis fabae Scopoli. (?). Argentina.
medicaginis Koch. Argentina.

Gliricidia sepium (G. maculata).

Aphis medicaginis Koch. Trinidad
 Island.

Gloxinia sp.

Aphis medicaginis Koch. Argentina.

Gossypium spp. (Algodonero).

Aphis gossypii Glover. Argentina,
 Peru, Trinidad Island.

Macrosiphum solanifolii (Ashmead).
 Peru.

Gourliea decorticans Gill. & Hook.

Aphis laburni Kalt. Argentina.

Graminea (Hierba).

Geocia lucifuga (Zehntner).
 Argentina.

Rhopalosiphum maidis (Fitch).
 Brazil.

splendens (Theobald). (sobre
 Raices). Peru.

Toxoptera graminum (Rondani).
 Brazil.

Granada. Véase *Punica granatum* L.Grosellero. Véase *Ribes* sp.Guava. Véase *Psidium guajava* L.Guayabo. Véase *Psidium guajava* L.Guayava. Véase *Orthostemon sellowianus* Berg.Guayule. Véase *Parthenium acetatum* Gray.Guindo dulce. Véase *Prunus avium* L.

- Guisante. Véase *Lathyrus* sp.
Haba. Véase *Vicia faba* L.
Haya sudamericana. Véase *Nothofagus* sp.
Hedera helix L. (Hiedra).
Aphis hederæ Kaltenbach.
Argentina.
Helecho. Véase *Acrostichum*, *Adiantum*, *Nephrolepis*.
Hibisco. Véase *Hibiscus* sp.
Hibiscus sp. (Hibisco).
Aphis gossypii Glover. Argentina.
Trinidad Island.
Toxoptera aurantii (B. d. Fonsc.).
Cosmopolitan.
Hiedra. Véase *Hedera helix* L.
Higuera. Véase *Ficus* sp.
Hinojo. Véase *Foeniculum vulgare* Gaertn.
Holeus halepense (L.). Véase *Sorghum halepense*.
Hordeum vulgare L. (Cebada).
Apionura lentic Pass. Argentina.
Rhopalosiphum maidis (Fitch).
Argentina.
Sipha carreræ Blanchard.
Argentina.
Toxoptera graminum (Rondani).
Argentina.
Hyptis spicata Poit.
Macrosiphum hyptidis Blanchard.
Argentina.
Hlex paraguayensis Bonop.
(Yerba mate).
Toxoptera aurantii (B. d. Fonsc.).
lombe). Argentina.
Imopra batatas Lam. (Batata).
Macrosiphum solanifolii (Ashmead).
Argentina.
Iris florentina L.
Yezabura tulipæ (B. d. Fonsc.).
Argentina.
Jacaranda sp.
Aphis gossypii Glover. Chile.
Jacaranda ovalifolia R. Br.
Aphis gossypii Glover. Argentina.
Jazmín. Véase *Gardenia florida* L.
Jazmín de Chile. Véase *Mandevilla suaveolens* Lindl.
Judía. Véase *Phaseolus* spp.
Juglans regia L. (Nogal).
Tuberolachnus salignus (Gmelin).
Argentina.
Juniperus uvifera Don. Véase *Philerodendron uviferum* (Don)
Florin.
Lactuca spp. (Lechuga).
Amphorophora sonchi (Oestlund)
(**A. cosmopolitanus** Mason.) Argentina, Brazil.
Macrosiphum lizerianum Blanchard.
Argentina.
Myzus persicæ (Sulzer). Argentina.
Lagenaria siceraria (Mol.) Standl.
Aphis gossypii Glover.
Trinidad Island.
Lantana sp.
Macrosiphum solanifolii (Ashmead).
Colombia.
Lathyrus sp. (Guisante, Pesal.)
Macrosiphum solanifolii (Ashmead).
Cosmopolitan.
Lathyrus sativus L. (Guisante, Pesal.)
Acyrtosiphon onobranchis (B. d. Fonsc.) [**Macrosiphum pisi** (Kalt.).] Cosmopolitan.
Macrosiphum solanifolii (Ashmead).
Chile.
Laurel negro. Véase *Nectandra* sp.
Laurel rosa. Véase *Nerium oleander* L.
Laurel fino. Véase *Viburnum tinus* L.
Lavatera arborea L. (Malvon).
Aphis gossypii Glover. Argentina.
Lechuga. Véase *Lactuca sativa* L.
Leguminosae.
Acyrtosiphon onobranchis (B. d. Fonsc.). Peru.
Aphis medicaginis (Koch).
Chile, Colombia, Peru.
rumicis Linn. Argentina.
Lens esculenta Moench (Lenteja).
Aphis laburni Kalt. Argentina.
Lenteja. Véase *Lens esculenta* Moench.
Lepidium sp.
Aphis gossypii Glover. Argentina.
Rhopalosiphum pseudobrassicæ (Davis). Argentina.
Libocedrus cupressoides Sargent.
Véase *Pilgerodendron uvifera* (Don) Florin.

- Libocedrus tetragona* (Hooker).
Véase *Pilgerodendron uvifera* (Don) Florin.
- Liliaceae*.
Myzus circumflexus (Buckton).
Argentina.
- Lilium* sp. (Azucena).
Aphis gossypii Glover. Argentina.
- Lonicera confusa* DC (Madreselva).
Hyadaphis conii (Davidson).
Argentina.
- Myzus persicae** (Sulzer). Argentina.
- Loto. Véase *Nelumbium* sp.
- Lycium argentinum* Hier.
(Comida de víbora).
Aphis rumicis L. Argentina.
- Lycopersicon esculentum* L.
(Tomate, Tomatera).
Aphis gossypii Glover. Argentina.
rumicis L. Argentina, Brazil.
- Macrosiphum solanifolii** (Ashmead).
Argentina, Chile.
- Myzus persicae** (Sulzer). Argentina.
- Madreselva. Véase *Lonicera confusa* DC.
- Maguey. Véase *Agave*.
- Maíz. Véase *Zea mays* L.
- Malva* spp.
Macrosiphum solanifolii (Ashmead).
Argentina, Peru.
solutum Blanchard. Argentina.
urtica (Schr.). Argentina.
- Myzus persicae** (Sulzer). Argentina.
- Malva rosa. Véase *Pelargonium graveolens* L'Herit.
- Malvón. Véase *Lavatera arborea* L.
- Mandevillea suaveolens* Lindl.
(Jazmín de Chile).
Aphis gossypii Glover. Argentina.
- Toxoptera aurantii** (B. d. Fonsc.).
Argentina.
- Mangifera* sp. (Mango).
Toxoptera aurantii (B. d. Fonsc.).
Tropical.
- Maní. Véase *Arachis hypogaea* L.
- Manzano. Véase *Pyrus malus* L.
- Mango. Véase *Mangifera* sp.
- Matambra.
Aphis senecionicoides Blanchard.
Argentina.
- Mathiola hederacea* (Rabanito).
Rhopalosiphon pseudobrassicae (Davis). Argentina, Peru.
- Myzus persicae** (Sulzer). Argentina.
- Mathiola incana* L.
Myzus persicae (Sulzer). Argentina.
- Medicago sativa* L. (Alfalfa).
Aphis laburni Kalt. Argentina.
gossypii Glover. Argentina.
- Melón. Véase *Cucumis melo* L.
- Membrillo. Véase *Cydonia vulgaris* Pers.
- Membrillo japonés. Véase *Cydonia japonica* Pers.
- Menta. Véase *Mentha arvensis* L.
- Mentha arvensis* L.
Kaltenbachella pallida (Haliday).
(*K. menthae* Schout.).
Argentina.
- Mimosa* sp.
Hysteroneura ogloblini Blanchard.
Argentina.
- Molle. Véase *Schinus dependens* (Ortega).
- Morrenia odorata* (H. & Arn.).
Aphis gossypii Glover. Argentina.
- Mostaza negra. Véase *Brassica nigra* (L.).
- Mostaza silvestre*. Véase *Brassica sinapis* Boise.
- Musa* sp. (Panana).
Pentalonia nigronervosa Coquer.
Brazil, Trinidad Island.
- Montezuma speciosissima*
Aphis gossypii Glover. Trinidad Island.
- Nabo. Véase *Brassica rapa* L.
- Nasturcia. Véase *Nasturtium officinale* L.
- Nasturtium officinale** R. Br.
(nasturcia).
Aphis medicaginis Koch. Chile.
- Rhopalosiphum pseudobrassicae** (Davis). Bolivia.
- Nectandra* sp. (Laurel negro).
Neolizerius tuberculatus Blanchard.
Argentina.
- Nelumbium* sp. (loto, ninfea).
Rhopalosiphum nymphaeae (Linn.).
Brazil.

- Nephrolepis* spp. (Helecho).
Idiopterus nephrolepidis (Davis).
 Argentina.
- Nerium oleander* L. (adelfa, baladre).
Aphis nerii (B. d. Fonsc.).
 Argentina, Chile.
- Nicotiana* sp. (tabaco).
Macrosiphum ambrosiae (Thomas).
 Peru.
solanifolii (Ashmead). Peru.
Myzus persicae (Sulzer). Peru.
- Ninfea. Véase *Nelumbium* sp.
- Nispero. Véase *Eriobotrya japonica* (Thunb.).
- Nogal. Véase *Juglans regia* L.
- Noguera. Véase *Juglans regia* L.
- Nothofagus* sp.
Neuquenaphis edwardsi (Laing).
 Argentina.
- Nothofagus dombei* Blume.
Neuquenaphis michelbacheri n. sp.
 Chile.
chilensis, n. sp. Chile.
Spicaphis michelbacheri, n. sp. Chile.
- Nymphara* sp.
Rhopalosiphum nymphaeae L. Brazil.
- Ocoteca acutifolia* (Nees.).
Lizerius ocoteae Blanchard.
 Argentina.
- Oleaceae.
Aphis gossypii Glover. Argentina.
- Olmo. Véase *Ulmus* spp.
- Ombu. Véase *Phytolacca dioica* L.
- Onobrychis sativa* Lam.
Aphis laburni Kalt. Argentina.
- Orchidaceae (Orquidea).
Myzus circumflexus (Buckton).
 Argentina.
- Orquidea. Véase *Orchidaceae*.
- Orthostemon sellovianus* Berg.
 (Guayava).
Aphis gossypii Glover. Argentina.
- Ortiga. Véase *Urtica* spp.
- Oryza sativa* L.
Aresha setigera Blanchard.
 Argentina.
- Palmera. Véase *Phoenix* sp.
- Papa. Véase *Solanum tuberosum* L.
- Parthenium acetatum* (Gray).
Macrosiphum lizerianum Blanchard
 Argentina.
- Parthenium hysterophorus* L.
Aphis gossypii Glover. Argentina.
Macrosiphum lizerianum Blanchard.
 Argentina.
- Pastinaca. Véase *Pastinaca sativa* L.
- Pastinaca sativa* L. (Pastanica).
Cavariella aegopodii (Scopoli).
 Argentina.
- Patata. Véase *Solanum tuberosum* L.
- Pelargonium* sp. (Geranio).
Aulacorthum pelargonii (Kalt.).
 Peru.
Macrosiphum solutum (Blanchard).
Pelargonium graveolens L'Herit.
 (Malva rosea).
Macrosiphum bosqui Blanchard.
 Argentina.
- Pelón. Véase *Prunus persica* var.
nucipersica Schn.
- Peral. Véase *Pyrus communis* L.
- Persea americana* Mill.
Aphis gossypii Glover. Argentina.
Persea sp.
Toxoptera aurantii (B. d. Fonsc.).
 Colombia.
- Pesal. Véase *Lathyrus sativus* L.
- Phaseolus* sp. (Judia, Frijol).
Macrosiphum solanifolii (Ashmead).
 Chile.
Smynthuroides betae (Westwood).
 [Trifidaphis phaseoli (Passe-
 rini)]. Argentina.
- Phaseolus lunatus* L.
Aphis laburni Kalt. Argentina.
medicaginis Koch. Argentina.
- Phaseolus vulgaris* L. (Judia, Frijol).
Aphis gossypii Glover. Brazil.
Macrosiphum solanifolii (Ashmead).
 Peru.
- Phlox* sp. (Flox).
Myzus persicae (Sulzer). Peru.
- Pharhe porphyria* Griseb.
Lizerius ocoteae Blanchard.
 Argentina.
- Phoenix* sp.
Aphis fabae Scopoli. Argentina.
medicaginis Koch. Argentina.
- Phragmites phragmites* (L.). (P.
communis Trin.).
Hyalopterus arundinis (Fab.). Chile.

Phytolacca dioica L.

Toxoptera aurantii (B. d. Fonsc.).
Argentina.

Pieris sp.

Macrosiphum ambrosiae (Thomas).
Peru.

Pilgerodendron uriferum (Don)

Florin.

Chileaphis michelbacheri n. sp.
Chile.

Pimpinella anisum L.

Cavariella aegopodii (Scopoli).
Argentina.

Myzus persicae (Sulzer). Argentina.

Pino. Véase *Pinus* spp.

Pinus spp.

Pineus havrylenkoi Blanchard.
Argentina.

Pinus halepensis Mill.

Cinara pini L. (**Lachnus pineti**
Koch). Argentina.

Pinus radiata Don.

Cinara pini L. (**Lachnus pineti**
Koch). Argentina.

Pinus pinaster Ait.

Cinara pini L. (**Lachnus pineti**
Koch). Argentina.

Piretro. Véase *Pyrethrum* sp.

Pittosporum sp.

Aphis fabae Scop. var. **bazzii**
Blanchard. Argentina.

Polipodia. Véase Helecho, Ploypodiaceae.

Polypodiaceae (Polypodia).

Idiopterus nephrolepidis (Davis).
Cosmopolitan.

Populus alba var. *pyramidalis* Bunge
(Alamo).

Pemphigus bursarius (L.).
Argentina.

Phloeomyzus passerinii (Signoret).
Argentina.

Populus angulata Ait. (Alamo).

Pemphigus populi-transversus Riley.
Argentina, Brazil.

Populus canadensis Moench (Alamo).

Pemphigus populi-transversus Riley.
Argentina.

Populus simonii Carr (Alamo).

Pterocomma populeum (Kalt.).
(**Aphis populea** Kalt.) Argentina.

Porotilla de los sapos. Véase *Vigna*
luteola (Jacq.).

Prunus spp.

Aphis prunicola Kalt. Brazil.

Appelia schwartzi (Börner).
Argentina.

Brachycandus helichrysi (Kalt.).
Argentina, Chile.
persicae-niger (Smith).
Argentina.

Hyalopterus arundinis (Fab.). Chile.

Myzus persicae (Sulzer). Argentina.

Rhopalosiphum nymphææ (L.).
Cosmopolitan.

Prunus armeniaca L. (Damasco).

Brachycaudus schwartzi Böerner.
Argentina.

Prunus avium L.

Brachycaudus helichrysi (Kalt.).
Argentina.

Macrosiphum solanifolii (Ashmead).
Argentina.

Prunus domestica L. (Ciruelo).

Brachycaudus schwartzi (Börner).
Argentina.
helichrysi (Kalt.). Argentina,
Brazil.
persicae-niger (Smith).
Argentina.

Prunus persica L. (Duraznero).

Appelia schwartzi (Börner).
Argentina.

Brachycaudus helichrysi (Kalt.).
Argentina, Brazil, Chile.
persicae-niger (Smith).
Argentina.

Myzus persicae (Sulzer). Argentina.

Psidium guajava L. (Guayabo,
guayaba).

Aphis gossypii Glover.

Punica granatum L. (Granado).

Aphis gossypii Glover. Peru.

Macrosiphum solanifolii (Ashmead).
Peru.

Pyrethrum sp. (Piretro).

Macrosiphum bonariensis Blanchard.
Argentina.

Pyrus sp.

Myzus persicae (Sulzer). Argentina.

Pyrus communis L. (Peral).

Aphis gossypii Glover. Argentina.
laburni (Kalt.). Argentina.

Eriosoma lanigerum (Hausmann).
Brazil (?).

Macrosiphum solanifolii (Ashmead).
Argentina.

Pyrus malus L. (Manzano).

Aphis gossypii Glover. Argentina.
pseudopomi Blanchard.
Argentina.

Eriosoma lanigerum (Hausmann).
Argentina, Brazil, Chile, Peru.

Hyalopterus arundinis (Fab.).
Chile.

Macrosiphum solanifolii (Ashmead).
Argentina.

Quercus sp.

Tuberculoides querciplatensis
Blanchard. Argentina.

Quercus ilex L.

Tuberculoides grodsinskyi
Blanchard. Argentina.

Quercus robur L.

Tuberculoides elegans Blanchard.
Argentina.

Rabanito. Véase *Raphanus sativus* L.

Ramino. Véase *Boehmeria nivea* Gaud.

Raphanus sativus L.

Brevicoryne brassicae (L.).
Argentina.

Rhopalosiphum pseudobrassicae
(Davis). Argentina.

Remolacha. Véase *Beta vulgaris* L.

Repollo. Véase *Brassica oleracea* L.

Revienta caballo. Véase *Solanum capsicastrum* Link., *S. sisymbriifolium* Lam.

Ribes sp.

Aphis rumicis L. Chile.

Roble. Véase *Quercus* spp.

Robinia pseudoacacia L.

Aphis laburni Kalt. Argentina.

Rosa. Véase *Rosa centifolia* y *R. gallica* L.

Rosa spp.

Aulacorthum pseudorosaefolium
Blanchard. Argentina.

Macrosiphum rosae (Linn.).
Argentina, Brazil, Chile, Peru.

Rosa centifolia and *R. gallica* L.

Aulacorthum pseudorosaefolium
Blanchard. Argentina.

Macrosiphum rosae (L.). Argentina.

Myzus rosarum (Kalt.). Argentina,
Brazil.

Passerinia tetrahoda (Walker).
Argentina.

Rumex spp.

Aphis rumicis Linn. Argentina,
Chile.

Myzus persicae (Sulzer). Argentina.

Rumex paraguayensis D. Parodi.

Baizongiella solanophila Blanchard.
Argentina.

Saccharum officinarum L. (caña de
azúcar).

Rhopalosiphum maidis (Fitch).
Argentina.

Sipha flava Forbes. Argentina,
Brazil, British Guiana.

Salix spp. (Sauce).

Aphis neosaliceti Blanchard.
Argentina.

Cavariella aegopodii (Scopoli).
Argentina.

Tuberolachnus saligna (Gmelin).
Argentina, Brazil, Chile, Peru.

Salix babylonica L.

Aphis citricidus (Kirkaldy).
Argentina.

Cavariella aegopodii (Scopoli).
Argentina.

Paratoxoptera argentinensis
Blanchard. Argentina.

Salix viminalis L. (Sauce "Osier").

Tuberolachnus saligna (Gmelin).
General.

Salsifí. Véase *Tragopogon porrifolius*
L.

Sambucus australis Cham. & Schl.

Aphis sambuci L. Argentina.

Sandía. Véase *Citrullus vulgaris*
Schrad.

Sauce. Véase *Salix* spp.

Saüco. Véase *Sambucus australis*
Chem. et Schl.

Schinus dependens Ortega.

Aphis schinifoliae Blanchard.
Argentina.

Scirpus sp.

Rhopalosiphum maidis (Fitch).
Argentina.

Scutia buxifolia Reiss.

Toxoptera aurantii (B. d. Fonsc.).
Argentina.

Secale cereale L. (Centeno).

Rhopalosiphum prunifoliae (Fitch)
(**R. pseudoavenae** Patch).
Argentina.

Secium edule Sw.

Aphis gossypii Glover. Argentina.

Senecio spp.

Brachycaudus helichrysi (Kalt.).
Argentina.

Macrosiphum capitophoroides
Blanchard. Argentina.

Myzus persicae (Sulzer). Argentina.

Senecio bonariensis Hook & Arn.

Aphis fabae Scopoli. Argentina.
medicaginis Koch. Argentina.

Sen-Sen. Véase *Cassia aphilla*.

Sesbania punicea (DC).

Aphis laburni Kalt. Argentina.
medicaginis Koch. Argentina.

Sida acuta Burm.

Aphis gossypii Glover. Trinidad
Island.

Sisymbrium Arnottianum Gill. & Hook.

Rhopalosiphum sisymbrii Del
Guercio. Argentina.

Solano. Véase *Solanum* spp.

Aphis gossypii Glover.

Solanum spp.

Aulacorthum pelargonii (Kalt.).
Peru. (Casual ?).

Aphis medicaginis Koch. Argentina.
rumicis L. Argentina.

Macrosiphum solanifolii (Ashmead).
Peru.

Myzus persicae (Sulzer). Argentina,
Peru.

Rhopalosiphum splendens
(Theobald). Peru.

Smynthuroides betae (Westwood).
(**Trifidaphis phaseoli** (Passe-
rini).)

Solanum capsicastrum Link.

Aphis rumicis L. Argentina.

Solanum lycopersicum L. (Tomate,
tomatera). See **Lycopersicon**
esculentum L.

Solanum melongena (Berengena).

Aphis gossypii Glover. Brazil,
Trinidad Island.

Solanum nodiflorum Jacq.

Aphis rumicis Linn. Argentina.
solanophilus Blanchard.
Argentina.

Solanum sisymbriifolium Lamb.

Aphis gossypii Glover. Argentina.
rumicis Linn. Argentina.

Solanum tuberosum L. (Patata, papa).

Aphis gossypii Glover. Peru.
rumicis Linn. Argentina.

Aulacorthum pseudosolani
(Theobald). Chile.

Macrosiphum cordobensis
Blanchard. Argentina, Peru.
solanifolii (Ashmead).
Argentina, Chile, Peru.

Myzus persicae (Sulzer). Argentina,
Bolivia, Peru.

Smynthuroides betae (Westwood).
[**Trifidaphis phaseoli** (Passe-
rini)] Argentina.

Solidago sp.

Brachycaudus helichrysi (Kalt.).
Argentina.

Sonchus spp.

Amphorophora lactucae (Kalt).
Argentina.

sonchi (Oestlund). Argentina,
Brazil, Chile.

Macrosiphum lizerianum Blanchard.
Argentina.
rosae (Linn.). Chile, Peru.
solanifolii (Ashmead). Chile.

Sonchus oleraceus Linn.

Amphorophora sonchi (Oestlund).
Argentina.

Sorgo. Véase *Sorghum halepense* (L.).

Sorghum halepense (L.) (Sorgo).

Rhopalosiphum maidis (Fitch).
Brazil, Chile, Peru.

Sipha flava Forbes. Argentina.
Brazil.

Spinacio oleracea L.

Brevicoryne brassicae (L.)
Argentina.

Macrosiphum solanifolii (Ashmead).
Argentina.

- Spiraea chamaedrifolia* L. (Corno de novia).
- Aphis fabae** Scopoli. Argentina.
medicaginis Koch. Argentina.
pseudopomi Blanchard. Argentina.
- Straussia* sp.
- Toxoptera aurantii** (B. d. Fonsc.). Argentina.
- Sunchillo. Véase *Wedelia glauca* (Ort.).
- Sugarcane. See *Saccharum officinarum* L.
- Sorghum. See *Holcus halepensis* (L.).
- Suncho. Véase *Baccharis salicifolia* Pers.
- Tanaceto. Véase *Tanacetum vulgare* L.
- Tabaco. Véase *Nicotiana* sp.
- Tanacetum vulgare* L.
- Macrosiphum bonariensis** Blanchard. Argentina.
cocoensis Blanchard. Argentina.
- Taraxacum vulgare* (Lam.). (diente de león).
- Macrosiphum macaloi** Blanchard. Argentina.
- Taro. Véase *Colocasia esculentum* L.
- Tasi. Véase *Araujia sericifera* Bert.
- Tasi fragante. Véase *Morrenia odorata* (Hook. & Arn.).
- Theobroma* sp. (Cacao).
- Toxoptera aurantii** (B. d. Fonsc.) Trinidad Island.
- Thuja occidentalis* L.
- Cupresobium juniperi** (DeGeer) (Cinara). Argentina.
- Thuja tetragona* Hooker. Véase *Philgerodendron uviferum* (Don) Florin.
- Tomate. Véase *Solanum lycopersicum* L.
- Tomatera. Véase *Solanum lycopersicum* L.
- Tragopogon porrifolius* L.
- Anuraphis tragopogonis** (Kalt.). Argentina.
- Trigo. Véase *Triticum vulgare* Vill.
- Triticum vulgare* Vill.
- Pemphigus populi-transversus** Riley. Argentina.
- Rhopalosiphum prunifolae** (Fitch). (**R. pseudoavenae** Patch). Argentina.
- Schizaphis graminm** (Rondani). (**Toxoptera**). Argentina.
- Tulipa* sp. (Tulipan).
- Aphis rumicis** L. Argentina.
- Aulacorthum eumorphum** Blanchard. Argentina.
- Brachycaudus tulipae** (B. d. Fonsc.). Argentina.
- Macrosiphum solanifolii** (Ashmead). Argentina.
- Myzus persicae** (Sulzer). Argentina.
circumflexus Buckton. Argentina.
- Tulipán Véase *Tulipa* sp.
- Tuya. Véase *Thuja*.
- Typha* sp. (espadana).
- Hyalopterus arundinis** (Fab.). Chile, Cosmopolitan.
- Rhopalosiphum maidis** (Fitch). Cosmopolitan.
- Ulmus* sp. (Olmo).
- Eriosoma lanigerum** (Hausmann). Argentina.
- Umbellifera*.
- Aulacorthum pseudosolani** (Theobald). Chile. (**Myzus**.)
- Urtica* sp. (Ortiga).
- Brachycaudus helichrysi** (Kalt.). Argentina. (**Aphis**.)
- Macrosiphum edrossi**, n. sp. Peru.
solutum Blanchard. Argentina.
- Urtica urens* L. (Ortiga).
- Myzus persicae** (Sulzer). Argentina.
- Vernonia* sp.
- Aphis gossypii** Glover. Argentina.
- Macrosiphum griersoni** Blanchard. Argentina.
- Viburnum tinus* L. (Laurel tino).
- Toxoptera aurantii** (B. d. Fonsc.). Argentina.
- Vicia faba* L. (Haba).
- Aphis fabae** Scopoli. Argentina.
medicaginis Koch. Argentina, Peru.
Macrosiphum solanifolii (Ashmead). Argentina.
- Vid. Véase *Vitis vinifera* L.
- Vigna luteola* (Jacq.).
- Picturaphis vignaphilus** Blanchard. Argentina.
- Vinca major* L.
- Aulacorthum eumorphum** Blanchard. Argentina.
- Myzus circumflexus** Buckton. Argentina.
persicae (Sulzer). Argentina.

Viola odorata L. (Violeta).

Idiopterus violae (Pergande).

Argentina.

Violeta. Véase *Viola odorata* L.

Vitis vinifera L. (Uva).

Aphis ampelophila Blanchard.

Argentina.

gossypii Glover. Argentina.

illinoisensis Shimer. Argentina.

Viteus vitifolii (Fitch). (**Phylloxera**).

Argentina, Brazil, Peru.

Walnut, English. See *Juglans regia* L.

Watsonia sp.

Macrosiphum solanifolii (Ashmead).

Argentina.

Wedelia glauca (Ort.).

Macrosiphum lizerianum Blanchard.

Argentina.

Xanthium sp. (Abrojo).

Anuraphis xanthii Del Guercio.

Argentina.

Yerba mate. Véase *Ilex paraguayensis*

Bonop.

Zahnia. Véase *Holcus halepensis* (L.).

Zanahoria. Véase *Daucus carota* L.

Zapallo. Véase *Cucurbita* sp.

Zea mays L. (Maiz).

Aphis gossypii Glover. Argentina.

Rhopalosiphum maidis (Fitch).

(**Aphis**). Argentina, Brazil,

Peru, Trinidad Island.

prunifolae (Fitch). [**R. pseudo-**

avenae (Patch)]. Argentina,

Peru.

SELECTED BIBLIOGRAPHY

ALLEN, N., and P. K. HARRISON

1941. The turnip aphid in the southern states and methods for its control. *United States Department of Agriculture Farmers' Bulletin*, no. 1863, pp. 1-10, 8 figs.

ANDERSON, T. J.

1915. Report on the Entomological Laboratory for the year ending 31st March, 1914. *Annual Report of the Department of Agriculture of British East Africa*, 1913-1914, pp. 52-83.

AVERILL, A. W.

1945. Index to genera and species of food plants. Supplement to *Catalogue of the Aphids of the World*. University of Maine Agricultural Experiment Station Bulletin, no. 393-S, pp. 1-50.

BAKER, A. C.

1915. The woolly apple aphid. *United States Department of Agriculture Annual Report*, no. 101, pp. 1-56.
1917. Life history of *Macrosiphum illinoisensis*, the grapevine aphid. *Journal of Agricultural Research*, vol. 11, pp. 83-90.
1920. Generic classification of the hemipterous family Aphididae. *United States Department of Agriculture Bulletin*, no. 826, pp. 1-109, pls. I-XVI, 1 fig. Professional paper.

BAKER, A. C., and W. F. TURNER

1916. Rosy apple aphid. *Journal of Agricultural Research*, vol. 7, pp. 321-344.
1919. Apple-grain aphid. *Journal of Agricultural Research*, vol. 18, pp. 311-324.

BAKER, J. McV.

1934. Algunos afidos Mexicanos (Some Mexican aphids). *Anales del Instituto de Biologia*, Tomo V., no. 3, pp. 209-222.

BLANCHARD, E. E.

- 1922a. Aphid notes. *Physis*, vol. 6, pp. 43-58, figs. 15-20.
- 1922b. Aphid notes. *Physis*, vol. 5, pp. 184-214, figs. 1-14.
- 1923a. Aphid notes. *Physis*, vol. 7, pp. 24-25, figs. 21-30.
- 1923b. A new aphidian tribe from Argentina. *Physis*, vol. 7, pp. 120-125, fig. 1-2.
1925. Aphid notes. *Physis*, vol. 8, pp. 12-22, figs. 1-5.
1926. Aphid notes. *Physis*, vol. 8, pp. 324-337, figs. 36-41.
1932. Aphid miscellanea. *Physis*, vol. 11, pp. 19-36, figs. 1-17.
1935. Aphid miscellanea, Part II. *Physis*, vol. 11, pp. 366-383, figs. 10-17.
1936. Identificacion microscopica de los pulgones (Aphididae) que invaden los frutales de la Republica Argentina. *Revista Argentina de Agronomia*, vol. 3, no. 1, pp. 27-34, figs.
1939. Los afidoideos Argentinos. *Physis*, vol. 17, pp. 857-1003, figs. 1-20.
1940. Descripcion de un nuevo afidiino Argentino, util para la Agricultura. *Revista Musco Nacional de Historia Natural*, vol. 44, pp. 45-48.

1944. Descripciones y Anotaciones de afidoideos Argentinos. *Acta Zoologica Lilloana* II; pp. 15-62, figs. 1-13.
1945. Primer suplemento al estudio sistematico de los afidos argentinos (Resumen). *Reuniones Argentinas de Agronomia*, vol. (2a), p. 105. (Not available to author.)

BÖRNER, C.

1952. Europae centralis aphides. Die Blattläuse Mitteleuropas. Namen, Synonyme, Wirtspflanzen, Generationzyklen. Pp. 1-259. Kurt Branco, Weimar (nicht Buchhandel).

BÖRNER, C., and F. A. SCHILDER

1932. Aphidoidea, Blattläuse. In *Handbuch der Pflanzenkrankheiten*. Pp. 551-715, figs. 273-392. Paul Parey, Berlin.

CHRISTENSEN, JORGE R.

1937. *Toxoptera graminum* Rondani. "El pulgón verde de los cereales." Pp. 1-12, 1 fig.

CHRISTÓBAL, U. L.

1946. El problema del "Pulgón Verde" de los cereales en la Argentina. *Argentina. Ministerio de Agricultura de la Nacion, Instituto de Sanidad Vegetal, Buenos Aires*, ano II, ser. B, no. 4, pp. 1-24, 15 figs.

DAVIDSON, J.

1923. Biological studies of *Aphis rumicis* Linn. *Annals of Applied Biology*, vol. 10, pp. 35-54.

DAVIS, J. J.

1914. The oat aphid. *United States Department of Agriculture Bulletin*, no. 112, pp. 1-16.
1915. The pea aphid with relation to forage crops. *United States Department of Agriculture Bureau of Entomology Bulletin*, no. 276, pp. 1-67, 17 figs. (Professional paper.)

DAVIS, J. J., and A. F. SATTERTHWAIT

1916. The false cabbage aphid. *Purdue University Agricultural Experiment Station Bulletin*, no. 185, pp. 915-939.

DEL GUERICO, G.

1908. *Aphis Taveresi*. *Broteria*, vol. 7, p. 143.

DICKSON, R. C., R. A. FLOCK, and M. McD. JOHNSON

1948. Orange tree quick decline. Insects in citrus plantings studied as possible carriers. *California Agriculture*, vol. 2, no. 12, pp. 3, 13, 3 figs.

ESSIG, E. O.

- 1911a. Aphididae of southern California VII. *Pomona College Journal of Entomology*, vol. 3, pp. 524-557, figs. 169-186. September.
- 1911b. Aphididae of Southern California VIII. Plant lice affecting the citrus trees. *Pomona College Journal of Entomology*, vol. 3, no. 4, pp. 586-603, figs. 191-196. December.

- 1938a. The ornate aphid, new to North America. *Pan-Pacific Entomologist*, vol. 14, pp. 92-95, fig. 1.
- 1938b. Aphids feeding on celery in California. *Hilgardia*, vol. 11, pp. 459-492, figs. 1-12.
1944. A new aphid on Guayule and notes on other species of *Cerosipha*. *Hilgardia*, vol. 16, pp. 177-184, figs. 1-6.
1947. Aphids feeding on violaceous plants in California. *Hilgardia*, vol. 17, no. 18, pp. 597-617, figs. 1-7.
- 1948a. Mounting aphids and other small insects on microscopic slides. *Pan-Pacific Entomologist*, vol. 24, no. 1, pp. 9-22, 1 fig.
- 1948b. The most important species of aphids attacking cruciferous crops in California. *Hilgardia*, vol. 18, no. 11, pp. 407-422, figs. 1-5.
1949. Aphids in relation to quick decline and tristeza of citrus. *Pan-Pacific Entomologist*, vol. 25, no. 1, pp. 13-23.

ESSIG, E. O., and S. I. KUWANA

1918. Some Japanese Aphididae. *Proceedings of the California Academy of Sciences*, 4th ser., vol. 8, no. 3, pp. 35-112, figs. 1-40, July 9.

FENNAIL, R. G.

1942. The citrus pests investigation in the Windward and Leeward Islands, British West Indies, 1937-1942. *Memoirs of the Imperial College of Tropical Agriculture*, Trinidad, 1942, pp. 1-66, 9 pls., 20 references.

FORBES, S. A.

1884. *Chaitophorus flavus* Forbes. (Original description). Thirteenth Report of the State Entomologist, State of Illinois, May 31, p. 42.

FULLAWAY, D. T., and N. L. H. KRAUSS

1945. Aphididae. In *Common Insects of Hawaii*. Pp. 62-65, pl. 4, figs. 11-18, 21. Tongg Publishing Company, Honolulu, T. H.

GILLETTE, C. P., and M. A. PALMER

- 1931-1934. The Aphididae of Colorado. *Annals of the Entomological Society of America*: I, vol. 24, pp. 827-934, figs. 1-100, 1931: II, vol. 25, pp. 369-496, figs. 101-208, 1932: III, vol. 27, pp. 133-255, figs. 209-333, 1934. Host index, general index.

GLOVER, T.

1855. Insects injurious and beneficial to vegetation. Report of the United States Commissioner of Patents for the year 1854, p. 62.

GÖLDI, E. A.

1855. Studien Blattläus (*Schizoneura lanigera* Hausm.: *Myzoxylus mali*). Druck und Verlag von Friederich Rothermel, Schaffhausen. Pp. 1-28, taf. 1-3.

GOOT, P. VAN DER

1912. Über einige wahrscheinlich neue blattlausarten aus der Sammlung des Naturhistorischen Museums Hamburg. *Mitteilungen Naturhistorisches Museum Hamburg*, vol. 29, pp. 273-284, figs. 1-4.

GRIOT, M.

1949. Los enemigos naturales del pulgon verde de los cereales. *Argentina Ministerio de Agricultura y Ganadería*, ser. A, no. 48, pp. 1-29.

GOWDEY, C. C.

1926. Catalogus insectorum Jamaicensis. *Entomological Bulletin of the Department of Agriculture, Jamaica*, no. 4, pt. I; pp. 1-114; pt. II; pp. 1-11.

GUIDO, A. S., and E. C. JAHN

1946. El pulgon verde los cereales del Uruguay. *Revista Facultad Agronomica*, no. 41, pp. 1-48, figs. 1-12.

HARRIS, MOSES

1776. Exposition of English insects. London, Pp. 66-67, pl. 13, fig. 5.

HAYWARD, KENNETH J.

- 1944a. Los pulgones o afididos. Estación Experimental Agrícola de Tucumán Circular, no. 129 (632.75 : 632.9), pp. 4-7, 4 figs.
1944b. El pulgon amarilla de la cana de azucar (*Sipha flava* (Forbes)) en Tucumán. *Estacion Experimental Agricola de Tucumán Circular*, no. 125 (632.75:633.61 (824.5) (633.61-2.75 (824.5))), pp. 3-8, 3 figs.

HEMPEL, A.

1901. A preliminary report on some new Brazilian Hemiptera. *Annals and Magazine of Natural History*, ser. 7, vol. 8, pp. 383-391.

HERRICK, G. W. and J. W. HUNGATE

1911. The cabbage aphid. *Cornell Agricultural Experiment Station Bulletin*, no. 300 pp. 717-746, figs. 286-292. Bibliography.

HILLE RIS LAMBERS, D.

1939. Contributions to a monograph of the Aphididae of Europe. II. The genera *Dactynotus* Ratinesque, 1818; *Microsiphum* Passerini, 1860; *Masonaphis*, nov. gen.; *Pharalis* Leach, 1926. *Temminckia*, vol. 4, pp. 1-134, 23 pls.
1947. Contributions to a monograph of the Aphididae of Europe. *Temminckia*, vol. 7, pp. 247-254, pl. 13, fig. 5.

HORSFALL, J. L.

1924. Life history studies of *Myzus persicae* Sulzer. *Pennsylvania State College of Agriculture Experiment Station Bulletin*, no. 185, pp. 1-16, 1 fig.
1925. The life history and bionomics of *Aphis rumicis*. *University of Iowa Studies*, vol. 21, no. 2, pp. 1-57.

HOTTE, F. C. and T. H. FRISON

1931. The plant lice, or Aphididae of Illinois. *Bulletin of the Illinois Natural History Survey*, no. 19, pp. 121-447, 336 figs., 10 plates.

JACOBS, F. H.

1947. An account of a black aphid, *Doralis fabae* (Scop.) subsp. *armata* (Hausmann), found on *Digitalis purpurea* L. *Bulletin of Entomological Research*, vol. 37, pt. 3, pp. 431-437, figs. 1. References.

JONES, M. G.

1942. A description of *Aphis (Doralis) rumicis* L. and comparison with *Aphis (Doralis) fabae* Scop. *Bulletin of Entomological Research*, vol. 33, p. 5.

JONES, THOS. H.

1915. Aphides or plant-lice attacking sugar-cane in Porto Rico. *Porto Rico Commissioner of Agriculture Bulletin*, vol. 11, p. 1-19.

JONES, THOS. H. and C. P. GILLETTE

1918. Life history of *Pemphigus populi-transversus*. *Journal of Agricultural Research*, vol. 14, pp. 577-594.

KENNEDY, J. S. and C. O. BOOTH

1950. Methods of mass rearing and investigating the host relations of *Aphis faba* Scop. *Annals of Applied Biology*, vol. 37, no. 3, pp. 451-470.
1951. Host alternation in *Aphis faba* Scop. I. Feeding preferences and fecundity in relation to age and kind of leaves. [*Review of Applied Entomology*, Ser. A, vol. 39, no. 6, pp. 198-199, 1951.] Original in *Annals of Applied Biology*, vol. 38, no. 1, pp. 25-64, 7 figs., 22 references.

KIRKALDY, G. W.

1907. On some peregrine Aphidae in Oahu. *Hem. Proceedings of the Hawaiian Entomological Society*, vol. i, pp. 99-102.

KOCH, C. L.

- 1854-1857. Die Pflanzenläuse, Aphiden, getreu nach dem Leben abgebildet und beschrieben. Nurnberg, Lotzbeck. Pp. viii + 335, 54 pls. in color.

LAING, F.

1927. An interesting aphid (new species) and a coccid from the Argentine Republic. *Revista de la Sociedad Entomologica Argentina*, vol. 2, no. 4, pp. 23-26, 1 fig.
1932. A new aphid pest of violets (*Myzus ornatus* n. sp.). *Entomologists' Monthly Magazine*, vol. 68, pp. 52-53.

LARSSON, S. G.

1941. *Aphis faba* and its host plants in Denmark. *Tidsskrift for Planteavl*, vol. 46, pp. 298-323 (in Danish). Reviewed in *Review of Applied Entomology*, ser. A, vol. 32, p. 69, 1944.

LIEBERMANN, JOSÉ

1930. Consideraciones definitivas acerca de la lucha biológica contra las plagas de la humanidad. Un nuevo enemigo natural del *Aphis nerii* Boyer, el terrible pulgón del laurel rosa. *Physis*, vol. 10, no. 35, pp. 166-170.

LIMA, A. DA COSTA

1942. Aphidoidea. In *Insetos do Brasil*. Tomo 3, capítulo 23. pp. 112-175, figs. 121-152. Bibliography on pp. 161-175.

LÓPEZ CHRISTÓBAL, UBALDO

- 1937a. Los aphidos de los cereales. Pp. 11-22, figs.

- 1937b. Los pulgones verdes de los cereales y sus parásitos. *Boletín del Laboratorio de Zoología Agrícola La Plata*, vol. 3, pp. 1-5.
1942. El pulgón verde de los cereales, *Toroptera graminum* Rondani. Lucha biológica química, mecánica. *Anales de la Sociedad Rural Argentina*, vol. 76, no. 2, pp. 186-192; *Suelo Argentina*, vol. 3, pp. 460-462, 1944.
1943. El pulgón verde de los cereales (*Schizaphis graminum* [Rondani] Blanchard i. l.). *El Campo*, vol. 29, no. 344, pp. 40-41, 43.

MASON, P. W.

1925. A revision of the insects of the aphid genus *Amphorophora*. *United States National Museum Proceedings*, vol. 67, pp. 1-92.
1927. Fauna Sumatrensis; Aphidae. *Supplementa Entomologica*, vol. 15, pp. 86-90.
1937. A new root aphid. *Proceedings Entomological Society of Washington*, vol. 39, no. 6, pp. 166-7, fig. 1.
1940. A revision of the North American aphids of the genus *Myzus*. *United States Department of Agriculture Miscellaneous Publications*, vol. 371, pp. 1-30, figs. 1-7.

MATUS, M. D.

1922. El pulgón lanigero de los manzanos (*Schizoneura lanigera* Hausm.), su destrucción por medio de la lucha biológica con el *Aphelinus mali*. *Anales de la Sociedad Rural Argentina*, vol. 57, pp. 720-723, figs.

MAXSON, ASA C.

1920. Principal insect enemies of the sugar beet in the territories served by the Great Western Sugar Company. Great Western Sugar Co., Denver, Colo., pp. vii + 157.

MORDVILKO, A.

1930. Aphids of the subtribe Hormaphidina. *Comptes Rendus Académie des Sciences de l'URSS.*, p. 277. (*Brasylaphis bondari* Mord.).

MOREIRA, C.

1925. Pulgoes do Brasil. Ministerio da Agricultura, Industria E. Commercio. *Instituto Biologico de Defesa Agricola Bol.*, no. 2, pp. 1-34, figs.

PALMER, M. A.

1939. Two unusual species of aphids infesting wheat. *Journal of Economic Entomology*, vol. 32, no. 2, pp. 345-346, figs. 1-2.

PATCH, E. M.

1907. The potato plant louse. *Maine Agricultural Experiment Station Bulletin*, no. 147, pp. 235-257.
1912. Aphid pests of Maine. *Maine Agricultural Experiment Station Bulletin*, no. 202, pp. 159-178.
1913. Aphid pests of Maine: Part II. *Maine Agricultural Experiment Station Bulletin*, no. 213, pp. 73-92.
1914. Maine aphids of the rose family. *Maine Agricultural Experiment Station Bulletin*, no. 233, pp. 253-280, figs. 89-97.

- 1915a. Pink and green aphid of potato. *Maine Agricultural Experiment Station Bulletin*, no. 242, pp. 205-223.
- 1915b. The pond lily aphid as a plum pest. *Science*, vol. 42, p. 164.
- 1915c. Two clover aphids. *Journal Agricultural Research*, vol. 3, pp. 431-433.
1916. Elm leaf rosette and woolly aphid of the apple. *Maine Agricultural Experiment Station Bulletin*, no. 256, pp. 329-344.
- 1917a. Eastern aphids, new or little known: Part I. *Journal of Economic Entomology*, no. 10, pp. 416-420.
- 1917b. The aphid of the choke cherry and grain. *Maine Agricultural Experiment Station Bulletin*, no. 267, pp. 293-297.
1919. Three pink and green aphids of the rose. *Maine Agricultural Experiment Station Bulletin*, no. 282, pp. 205-209.
1921. Rose bushes in relation to potato culture. *Maine Agricultural Experiment Station Bulletin*, no. 303, pp. 321-344.
1923. Aphididae in Hemiptera of Connecticut. *Connecticut State Geological and Natural History Survey Bulletin*, vol. 34, pp. 250-256, 290-311, 329-335.
1925. Potato aphids. *Maine Agricultural Experiment Station Bulletin*, no. 323, p. 9-36.
1927. The pea aphid in Maine. *Maine Agricultural Experiment Station Bulletin*, no. 337, pp. 9-20.
1928. The foxglove aphid. *Maine Agricultural Experiment Station Bulletin*, no. 346, pp. 49-60.
1929. The apple aphid and the citrus aphid. *Journal of Economic Entomology*, vol. 22, pp. 698-699.
1938. Food-plant catalogue of the aphids of the world. Including the Phylloxeridae. *Maine Agricultural Experiment Station Bulletin*, no. 393, pp. 35-431.

PHILLIPS, W. J. and J. J. DAVIS

1912. Studies on a new species of Toxoptera. *United States Department of Agriculture Bureau of Entomology, Technical Series*, no. 25, pt. 1, pp. 109-174, figs. 1-14.

PIERCE, W. DWIGHT

1917. A manual of dangerous insects likely to be introduced in the United States through introductions. *United States Department of Agriculture, Office of the Secretary*, Aug. 15, 1917, pp. 1-256, figs. 1-107, pls. I-XLIX.

PIRÁN, A. A.

1946. Bibliografía Entomológica Argentina. *Ministerio de Agricultura de la Nación, Instituto Sanidad Vegetal*, Año II, ser. B., no. 5, pp. 1-144

PRETHIERBRIDGE, F. R. and D. W. WRIGHT

1938. The cabbage aphid (*Brevicoryne brassicae* L.). *Journal Ministry of Agriculture*, pp. 140-148, 2 refs.

RECORD, SAMUEL J., and ROBERT W. HESS

1943. Timbers of the new world. *Yale University Press*. New Haven, Connecticut. Pp. xv + 640 (Citation p. 10).

REED, CARLOS S.

1910. Los Aphideos que atacan a los árboles frutales en la provincia de Mendoza. *La Viticultura Argentina*, vol. 1, pp. 35-42, figs.

REINIGER, C. H.

1942. (1941) Contribuição ao estudo dos possíveis insetos vetores de vírus dos "Citri no Brasil." *Boletim da Escola Nacional da Agronomia*, 1941, no. 2, Art. 6, pp. 225-245.

RIVNAY, E.

1937. Moisture as the factor affecting wing development in the citrus aphid, *Toxoptera aurantii* Boy. *Bulletin of Entomological Research*, vol. 28, pp. 173-9, figs. 1-7.

ROEPKE, W.

1928. Über die Franssenschen Untersuchungen an schwarzen Blattläusen der *Aphis faba*-Gruppe in Holland. *Stettiner Entomologische Zeitung*, vol. 89, pp. 1-30.

SAMPSON, WILSON

1946. A generic classification of California aphids by means of first instar nymphs. *University of California Publications in Entomology*, vol. 1, no. 12, pp. 365-402, 57 figs. Bibliography.

SEVERIN, H. H. P., and C. M. TOMPKINS

- 1950a. Aphid transmission of severe mosaic virus of annual stock. *Hilgardia*, vol. 20, pp. 93-102, pls. 1-4.
1950b. Transmission of radish-mosaic virus by aphids. *Hilgardia*, vol. 20, no. 11, pp. 191-198, pls. 1-7.
1950c. Aphid transmission of a mosaic virus and symptoms of other virus diseases of *Primula obconica*. *Hilgardia*, vol. 20, no. 15, pp. 279-288, pls. 1-8, (1 colored).

SHIMER, H.

1866. A new grape aphid. *Prairie Farmer*, Chicago, Illinois, Nov. 17, p. 316.

SILVESTRI, F.

- 1934, 1939. Aphididae in *Compendio di Entomologia Applicata*, Tipografia Bel-lavista, Portici, Italy. Pt. 1, pp. 1-448, figs. 1-414, 1934; pt. 2, pp. 449-974, figs. 415-878, 1939. Aphididae pp. 412-618, figs. 318-588.

SMITH, E. R.

1890. The black peach aphid. *Entomologica Americana*, vol. 6, pp. 101-103.

SMITH, KENNETH M.

1937. *Aphididae*. in *A Textbook of Plant Virus Diseases*. Blakiston's, Philadelphia, Pennsylvania. Pp. 15, 38, 45, 54, 122, 157, 168, 175, 418, 427, 505-548, 556, figs. 91-101. [Total pagination: x + 615, 101 figs.]

SMITH, L. B.

1919. The life history and biology of the pink and green aphid (*Macrosiphum solanifolii* Ashmead). *Virginia Truck Experiment Station Bulletin*, no. 27, pp. 27-79.

SMITH, LESLIE M.

1936. Biology of the mealy plum aphid, *Hyalopterus pruni* (Geoffroy). *Hilgardia*, vol. 10, no. 7, pp. 167-209, 12 figs. 1 pl.
- 1937a. Growth, reproduction, feeding, and wing development of the mealy plum aphid in relation to climate factors. *Journal of Agricultural Research*, vol. 54, no. 5, pp. 345-364, 9 figs.
- 1937b. Control of the mealy plum aphid. *University of California Agricultural Experiment Station Bulletin*, no. 606, pp. 1-34, 11 figs.

SOLIMAN, L. B.

1927. A comparative study of the structural characters used in the classification of the genus *Macrosiphum* of the family APHIDIDAE, with special reference to the species found in California. *University of California Publications in Entomology*, vol. 4, no. 6, pp. 89-158, figs. 1-77.

SQUIRE, F. A.

1937. Notes on the yellow aphid of sugar-cane *Sipha flava* Forbes. *Tropical Agriculture*, vol. XIV, no. 1, pp. 3-4, 1937. (*Review of Applied Entomology*, Ser. A., vol. 25, 252-253, 1937).

SWAIN, A. F.

1919. A synopsis of the Aphididae of California. *University of California Publications in Entomology Technical Bulletin*, vol. III, no. 1, pp. 1-221, pls. 1-17, Nov. 1.

SYMES, C. B.

1924. Notes on the black citrus aphid. *Rhodesia Agricultural Journal*, vol. xxi, nos. 5 and 6, pp. 612-626 + 725-732, 2 pls., 7 figs. Salisbury, October and December.

TATE, H. D., and S. R. VANDENBERG

1939. Transmission of sugar cane mosaic by aphids. *Journal of Agricultural Research*, vol. 59, pp. 73-80, 8 refs.

TAYLOR, L. R.

1950. Synchronous movement of *Aphis fabae* Scop. (Hem. APHIDIDAE). *Entomologists' Monthly Magazine*, series 4, no. 122 [no. 1029], p. 52.

THEOBALD, F. V.

- 1913-1914. African Aphididae. *Bulletin of Entomological Research*, no. 4, pp. 313-337.
- 1926-1927-1929. The plant lice or Aphididae of Great Britain. Hadley Bros. London, England. Vol. 1, pp. 1-372, 196 figs., 1926; vol. II, pp. 1-411, 182 figs., 1927; vol. III, pp. 1-364, 213 figs., 1929.

THOMAS, CYRUS

- 1878 (1877). A list of the species of the tribe Aphidini. Family Aphididae, found in the United States, which have been heretofore named, with descriptions of some new species. *Bulletin Illinois State Laboratory of Natural History*, vol. I (No. 2), Art. 1, pp. 3-16. Printed December 13, 1877, distributed 1878.

WEBSTER, F. M. and W. J. PHILLIPS

1921. The spring grain aphid or "green bug." *United States Department of Agriculture Bureau of Entomology Bulletin* 110, pp. 1-153.

WOLCOTT, G. N.

1922. Afidos de importancia economica en Puerto Rico. *Departamento de Agricultura Y Trabajo, Estación Experimental Insular*, Circ. 59, pp. 1-11, fig. 9.
1928. Los Afidos que afectan la Industria Azucarera del Peru. *La Vida Agrícola*, vol. 59, pp. 877-886, 1 fig. (*Review of Applied Entomology*, vol. 17, p. 99-100, 1929).
1933. An economic entomology of the West Indies. *Entomological Society of Puerto Rico*, San Juan. Pp. xxiii + 688, 111 figs.
1936. Aphididae. *The Journal of Agriculture of the University of Puerto Rico*, vol. 20, pp. 111-119.
1948. The insects of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico*, vol. xxxii, no. 1, pp. 1-224. (Many illustrations unnumbered). APHIDIDAE: pp. 146-156.

YOTHERS, W. W. and F. R. COLE

1924. The citrus aphid—*Aphis spiracola* Patch. *Florida Grower*, vol. 30, pp. 6, 15, 17.

ZIMMERMAN, E. C.

1948. Superfamily APHIDOIDEA. *In* *Insects of Hawaii*, vol. 5, pp. 53-131, figs. 25-85.